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RHETORICAL DEVICES, MARKEDNESS, & THE PROMINENCE STRATEGY: A STUDY IN THE INFORMATION MANAGEMENT STRATEGIES USED IN DISCOURSE PROCESSING

BY

ELYSE K. ABRAHAM ©

A thesis submitted to the Faculty of Graduate Studies and Research in partial fulfillment of the requirements for the degree of Doctor of Philosophy

in

PSYCHOLINGUISTICS

DEPARTMENT OF LINGUISTICS

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SPRING 1995

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May 1, 1995
(date)

Dedicated to

everyone who has ever

blazed a trail

or

tamed a dragon

Abstract

In spite of almost two decades and several different research approaches, the phenomenon of discourse prominence has remained poorly understood. This is largely because these studies have not considered the role of the communicator during discourse processing. The present study is a psycholinguistic investigation of discourse prominence that focuses on the prominence coding function of a set of marked linguistic structures that are similar to those described by classical rhetorical devices, e.g., constituent shift (hyperbaton). It is posited that these marked structures function within a cognitively based *prominence strategy* which operates during discourse processing. Three empirical studies were used to examine the coding function of nine types of marked structures within the prominence strategy as it operates in the production and comprehension of English discourse.

A production experiment found evidence that these nine types occur consistently in unplanned spoken and written discourse, suggesting that the types originate during discourse processing rather than during a self-editing stage after the fact. A production text analysis study provided evidence that the nine types tend to occur consistently in a range of genres, regardless of genre type or modality (spoken/written) or available planning/self-editing time. A comprehension experiment found evidence that the marked types tend to facilitate recall in a range of genres.

Together these empirical studies support the inclusion of these marked linguistic structures in a cognitively based prominence strategy. This prominence strategy functions during discourse processing, in both production and

comprehension. During production, the speaker/writer uses such marked linguistic types to code important/significant information as prominent. During comprehension, the hearer/reader uses this coding as a cue to which information is most important/significant to the meaning conveyed by the discourse. It is anticipated that the findings of this research will have far reaching implications for both language and communication theories in several disciplines.

Acknowledgments

The wonderful thing about working in discourse psycholinguistics is that it is a vast new frontier with endless exciting adventures. The research described in this thesis has been an odyssey through that frontier -- complete with trails waiting to be blazed, and dragons waiting to be tamed. I have found myself constantly venturing into new or scarcely studied areas of discourse, coping with unexpected obstacles, and making fascinating discoveries. The journey has been a long one, and there have been many people who have played a role in making its success possible. I owe a debt of gratitude to each and everyone of them.

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Chapter 1

Introduction

1.1 Research Perspective

The processes in communication represent a mystery of infinite complexity. This is especially true of the cognitive processes of comprehension and production. How, for instance, does the speaker[1] produce a message that effectively conveys his or her specific ***intended*** meaning? How, in turn, does the hearer comprehend that message, and in so doing, reconstruct the speaker's intended message by having somehow distinguished that intended meaning from a vast array of ***possible*** meanings? At least a partial solution to this puzzle may be found through an investigation of how and why, during discourse processing, the communicator's management of information creates prominence in discourse.

Discourse prominence, specifically the role of certain marked linguistic structures[2] in coding discourse prominence, is the focus of the present research. The objective is to investigate the function of marked linguistic structures of the rhetorical device type in the coding of discourse prominence, towards assessing the function of these structures within a cognitively based information management strategy -- *the prominence strategy*.

It is posited here that the prominence phenomenon in discourse is the consequence of the prominence strategy. This strategy incorporates marked linguistic forms which parallel linguistic variants similar to those produced by prominence-creating rhetorical devices. As such, this prominence strategy functions in conveying intended meaning, thereby facilitating language processing in both its comprehension and production phases.

1.2 Rationale

Discourse prominence is the phenomenon in which linguistic units differ in their perceptual salience to the language user. This greater perceptual salience of information represents greater importance or significance to the language user. The speaker codes important information in such a way that it is more prominent than the surrounding discourse; the hearer recognizes this prominence-coded information as having greater importance/significance for the communication.

While this fundamental link between prominence and importance seems evident, it is not, however, accepted in all research dealing with prominence. Indeed, the divergent studies that make up prominence research tend to conflict not only on this issue concerning the fundamental nature of prominence, but also on a variety of other critical issues. In addition, not only does prominence research lack

such a theoretical coherence, it also fails to account for prominence in all types of discourse.

Research in discourse prominence actually consists of four major theoretical approaches. These divergent approaches are, for the most part, based on two metaphors: staging and grounding. Staging was an early short-lived approach consisting of a few studies, whereas grounding, the prevalent and current metaphor for discourse prominence, consists of a large body of highly divergent research.

The staging approach views prominence as the consequence of thematization/topicalization processes. In this view, it is maintained that speakers make choices about linearization that result in thematized information being staged higher, i.e., with greater prominence, than the surrounding discourse. Prominence, then, is determined essentially by the speaker's perspective as it is reflected in thematization. Given this focus on thematization, the approach may, in broad terms, be said also to include other studies which are not based specifically on the staging metaphor, but which also view prominence in terms of thematization.

Research based on grounding, on the other hand, consists of three quite different approaches to prominence: literary studies in stylistics, syntax-oriented studies in psycholinguistics, and discourse-oriented studies primarily in functional/typological linguistics. All three approaches are based on the grounding metaphor, or perhaps more precisely, on the *'gestalt metaphor'*, i.e., the assumption that the gestalt figure/ground distinction in visual perception has a parallel in language, the foreground/background distinction. These three approaches, however, have little in common, and in fact, though they do agree that foreground represents prominence, they disagree on what this prominence means and how it is achieved.

A comparison of grounding research with staging-thematization research reveals similar discord and conflict among claims. These research approaches diverge on critical theoretical and empirical issues, in particular on the fundamental nature of prominence, what discourse units may be coded as prominent, how prominence is coded in discourse, and how prominence functions in discourse. As a consequence, integration of this research into a coherent theory of discourse prominence seems to be quite untenable. Furthermore, none of these approaches has been shown to account for prominence in all types of discourse. But rather, it is the case that each approach tends to be restricted in its applicability; perhaps the most notorious in this regard is the discourse oriented grounding approach which accounts only for narrative discourse.

Such evidence indicates that these studies have not succeeded in adequately assessing prominence. The phenomenon is far from being well understood. In fact, it might be said that all this previous research reveals with any degree of certainty is that discourse does indeed seem to have prominence. However, if we accept that discourse has prominence, then we must also acknowledge that it is the speaker who initially creates that prominence during the production phase of language processing, and further, that it is the hearer who uses that prominence during the comprehension phase. Discourse prominence has its basis in cognitive processing.

Recent discourse investigations in cognitive processing (such as Prideaux 1990; Abraham 1991) underscore the fact that discourse is not a haphazard assortment of information units. They suggest, rather, that during communication the communicator strategically manages the information to be conveyed. The consequence of this strategic control of information involves a variety of discourse phenomena, such as given/newness, coherence, topicality, and discourse prominence. Prominence then, like all discourse phenomena, is undoubtedly a consequence of the language user's management of information during discourse processing, and as such, it must have a very specific discourse function.

Given this discourse processing conception of prominence, it is quite plausible that, as was suggested above, the increased salience of prominent information does indeed represent greater importance to the language user. It is further plausible that this information is important specifically because it is crucial for conveying the speaker's intended meaning. Since studies in psycholinguistics (for instance, Kemper & Thissen 1981) indicate that attention during comprehension is drawn to the unusual or unexpected, it also is plausible that prime candidates for coding prominence are the marked linguistic usages which occur regularly in all discourse types, but which are usually and unsatisfactorily dismissed as stylistic choices.

Perhaps the most complete documentation of marked usages is found in classical rhetorical theory. Indeed, prominence creation is an attribute frequently associated with rhetorical devices. This association is more than incidental. Classical rhetorical theory is based on an awareness that the strategic manipulation of communication variables (such as those associated with memory and attention) can facilitate comprehension. Since the same variables are also found in naturally occurring discourse, classical rhetoric may provide useful insights or suggest directions for discourse research. In the case of the prominence phenomenon, it is clear that classical rhetoric does suggest such insight -- that associated with rhetorical devices which are inherently prominence creating.

The present research is based on the following theoretical conception of the prominence phenomenon. Discourse prominence is the result of an information management strategy. This ***prominence strategy*** incorporates marked linguistic forms which are similar to those produced by certain prominence-creating rhetorical devices. These marked forms are used to code important information as more prominent than the surrounding discourse. Thus the speaker uses the prominence strategy to cue the hearer that information coded in marked forms is important to deriving the meaning of the discourse; the hearer uses the strategy to derive intended meaning, to distinguish it from other possible meanings. The prominence strategy, then, facilitates processing in both comprehension and production by providing a principled means of conveying important information.

Given the essential cognitive basis of prominence, it is evident that a viable theory of prominence is only possible within a cognitive (i.e., psycholinguistic) framework. Further, given that prominence is a phenomenon occurring at the level of discourse (rather than in isolated sentences), it also is evident that the research framework must be situated in discourse. The research in this investigation is situated within just such a discourse processing framework. Three hypotheses

associated with the above theoretical conception of prominence are tested in comprehension and production experiments. These experiments provide evidence for first, the presence of the prominence strategy, second the strategy's incorporation of marked linguistic usages, and third the strategy's function of facilitating discourse processing by providing a principled means of conveying important information.

In closing, it is important to stress that the domain of this study is essentially *linguistics*, not rhetoric. Further, the focus of this study is not classical rhetorical devices in literary works, but rather, marked linguistic structures which occur in common ordinary discourse and which are similar to such rhetorical devices. In essence, then, *the objective of this research is to examine specific marked linguistic structures, and to determine how these marked structures function in common ordinary discourse.*

1.3 Overview

This thesis consists of eight chapters. The rationale and general overview in Chapter 1 is followed by an evaluation of prior prominence research that is directed towards establishing the theoretical status of prominence in Chapter 2. Chapter 3 discusses the link between rhetorical devices, markedness, and the prominence strategy, and situates the role of markedness in discourse prominence within the language processing theory that forms the framework for this research. Chapter 4 discusses preliminary preparations for the empirical studies: first, the specification of markedness, and then, the selection and definition of the marked linguistic structures that are the focus of this investigation. The production experiment follows in Chapter 5, the production text analysis study in Chapter 6, and the comprehension experiment in Chapter 7. The thesis concludes in Chapter 8 with a discussion of theoretical implications and directions for future research.

Notes

[1] Hereafter *the speaker* will, in appropriate contexts, be taken as *the speaker/writer*, and *the hearer* as *the hearer/reader*.

[2] The term *structure* as it is used in *marked linguistic structures* refers not strictly to a syntactic structure but more to structure in the sense of a *form* that is the unity of syntax and semantics.

Chapter 2

Theoretical approaches to discourse prominence

2.1 Approaches to the study of prominence: staging and grounding

Discourse prominence has been studied through divergent and extensive research. As suggested above, this research is, for the most part, based on two metaphors, staging and grounding, but is actually comprised of four different approaches. Staging studies together with other work in thematization form one approach. The other three approaches are based on the grounding metaphor: literary studies in the new stylistics, syntax studies in psycholinguistics, and discourse studies in functional/typological linguistics. These four approaches do not, however, form a coherent theory of prominence; rather, they conflict on several crucial issues regarding prominence, in particular its fundamental nature, the codable discourse units, the coding devices (i.e., discourse correlates), and its discourse function.

2.1.1 Staging/thematization research

Staging was introduced by Grimes (1975) and elaborated by Clements (1979). In this early approach, highly staged discourse units are considered to have greater prominence. The discourse units that are candidates for high staging are, typically, noun phrases, and these are coded as such by being thematized. However, it is recognized that a variety of other discourse units such as adverbials and wh-words may also be thematized. While the function of prominence is not explicitly addressed, it appears that staging is integral in organizing discourse by "expressing the speaker's perspective" (Grimes 1975:213).

The staging metaphor that serves as the basis of the work of Grimes and Clements is related to other research which is not based specifically on the staging metaphor, but which also discusses prominence in terms of thematization. For instance, studies such as Halliday (1967, 1968) and Perfetti and Goldman (1974) view the relationship between thematization and prominence in terms of information that is maintained in focus throughout a discourse. These staging/thematization studies are not restricted in theory to any type of discourse; however, the primary emphasis is on short passages of written prose, the data source for such studies.[1]

2.1.2 Grounding research

Following the earlier staging approach, prominence has more recently been investigated in terms of the grounding distinction, an approach which differs considerably from staging, and which makes up the vast majority of research directed towards prominence. As indicated above, grounding research actually consists of

three different approaches. These will be referred to in terms of their *research orientation* and their *specific focus*: *lit/style, syntax/entity, and discourse/event.*

2.1.2.1 Lit/style studies

The application of linguistic theory and principles to literary pursuits has spawned a field of study known as "new stylistics" (Leech & Short 1981; cf. Leech 1966, 1969; Freeman 1970; Halliday 1971; Enkvist 1971). These literary stylistics studies have adopted the view of foregrounding held by the Prague School linguists who conceived of 'foregrounding' (Garvin's 1964 translation of the Czech *aktualisace*) as the principle means of achieving the "esthetic function" of language, as it is displayed in poetic and other literary language. In Prague School terms, foregrounding is the artistically deliberate "violation of the norm" that is set by the "standard language" through social convention (Mukarovsky 1964a:18). That is to say, usage in the standard language is under "automatization" and the deliberate violation of this norm by foregrounding causes "deautomatization" -- "the use itself attracts attention" (Havranek 1964:10; cf. Mukarovsky 1964b; Garvin 1964).

Lit/style studies consider such foregrounded text to be prominent, but make a critical distinction between prominence that has literary relevance and incidental prominence that has no literary relevance. In this approach, the term 'foreground' is applied only to artistically motivated prominence, i.e., prominence that is relevant to the reader's interpretation of the literary text. Other prominence, such as occurs in conversation and other discourse types, lacks the qualifying characteristic of artistic motivation, and is not considered foreground.

In this approach, there seem to be no restrictions on the discourse units that may be foregrounded (just as long as they are units of literary text). Foregrounding occurs by coding the units in the form of creative usage; this may be achieved in a variety of ways, such as violating rules of syntax, register, or genre, and as Leech and Short (1981:28) point out, "foregrounding is not limited to the more obvious poetic devices" but rather, it "may take the form of denying the expected clues of context and coherence".

The function of prominence seems to be to signal sites of special literary relevance. However, since the presence of prominence depends on what the reader/critic actually recognizes as literary relevance, this approach is heavily subjective and thus, analysis may be expected to vary from reader to reader. Basically, this approach tends to focus primarily on the writer:reader relationship, rather than speaker:hearer, and it tends to be strongly oriented to the reader (and especially, to reader interpretation), rather than the writer. As well, the lit/style approach is, by its theoretical focus, also restricted in its range of application, in that it is applicable solely to literary works, written prose or poetry.

2.1.2.2 Syntax/entity studies

A second grounding approach to prominence is formed by syntax/entity studies, sentence production studies done within a psycholinguistic framework. In these syntax oriented studies, the only candidates for foregrounding are NP-entities. As studies such as Sridhar (1988) suggest, such NP-entities as are maintained in

focus during processing tend to be foregrounded (cf. Osgood 1971; Osgood & Bock 1977; Flores d'Arcais 1987). These entities are marked as foreground by being encoded either earlier in the sentence or in higher grammatical functions, for instance, as subject or object rather than object of the preposition.

The specific function of prominence is not explicitly addressed in this view; however, it seems evident that at least those focused entities which occur early in the sentence represent thematically important information. (In this sense, syntax/entity studies are similar to staging-thematization studies.) As well, Levelt (1989) has suggested that such foregrounding signifies that the prominent information has greater human interest to the language user. While syntax/entity studies are not restricted theoretically to any discourse type, their findings have not been shown to be widely applicable. Very few studies have elicited spoken data, and most studies have used a simple forced choice task in which subjects are asked to select the most appropriate sentence for a given situation.

2.1.2.3 Discourse/event grounding studies

The third approach based on the grounding metaphor is the prevalent linguistic approach, and also comprises the largest body of research in prominence. Discourse/event grounding, however, is an approach in which the studies show considerable conflict in their claims and findings. These discourse oriented studies are carried out primarily within a functional/typological framework (e.g., Hopper 1979, 1982; Hopper & Thompson 1980; Longacre 1985, etc.); only a scant few are within a cognitive functional framework (Prideaux & Stanford 1990; Prideaux 1990, 1991c).

In this approach, prominence or *foreground* is not taken to represent importance, but rather the foreground/background distinction is held to be perceptually neutral (see for instance, Reinhart 1984; see also 2.2.1.1.3 below). While the function of prominence/foreground is not explicitly addressed, it would seem that foreground plays a role in perceptual organization, i.e., the separation of temporally sequenced narrative events from other information. These temporally sequenced narrative events are the only candidates for foregrounding, and they are marked as foreground through a number of lexical and morphosyntactic coding devices, including tense/aspect (Hopper 1979), transitivity (Hopper & Thompson 1980), clausal dependence (Tomlin 1985), a variety of morphosyntactic/lexical devices (Jones & Jones 1979), and a variety of grammatical/lexical devices, such as variation in clause length/complexity, expectedness in the relevant frame, etc. (Polanyi & Hopper 1981; cf. Weber 1983).

2.1.3 Comparison of the prominence research approaches

The approaches which make up prominence research are, then, quite divergent in their conceptions of prominence. First of all, their views of the fundamental nature of prominence vary considerably. Although all approaches would probably agree that prominence represents increased salience, they would tend to disagree as to how, or indeed, whether that salience corresponds to importance for the language user. Staging-thematization and syntax/entity

grounding might agree that prominence indicates some type of increased importance for the language user. In lit/style grounding, of course, prominence indicates literary relevance, a specific and highly variable type of importance, since it depends greatly on the reader/critic. In contrast, discourse/event grounding maintains that prominence/foreground does not represent importance at all, but rather that foregrounding is part of a perceptual distinction that plays a role in perceptual organization, not in indicating esthetic value.

These approaches also differ in the discourse units that are candidates for prominence-coding. Lit/style grounding suggests that any unit may be coded -- just as long as it is a unit of *literary* text. Staging-thematization studies suggest that only *thematizable* units (noun phrases, adverbials, wh-words, etc.) are coded, whereas syntax/entity grounding suggests that only NP-*entities* may be coded. Discourse/event grounding, of course, maintains that only *events* may be coded, particularly only those events that are temporally sequenced and in narrative discourse.

The devices for coding prominence also vary considerably. Lit/style grounding suggests that any creative, artistically motivated usage codes foreground. In the staging-thematization approach, it is any coding as theme/topic that makes information highly staged; this is similar to syntax/entity grounding where foregrounding of an entity occurs if it is coded by position early in the sentence or in high grammatical function. But again these all stand in opposition to the various correlates proposed in discourse/event grounding.

The function of prominence in discourse is not explicitly addressed in any of these approaches. In staging-thematization, prominence seems to be integral in presenting the speaker's perspective. In lit/style grounding, it seems to signal literary relevance. In syntax/entity grounding, it seems to signal what the language user is interested in (and therefore, focusing on). In discourse/event grounding, it seems to function in the perceptual organization of the temporal event line.

Prior research in prominence consists, then, of divergent approaches that conflict on numerous levels. Integrating these approaches into a coherent theory of prominence does not seem tenable. Leaving aside, for the moment, restrictions to discourse type (for instance, narrative text in discourse/event grounding versus literary text in lit/style grounding), it is abundantly clear that prominence cannot represent both information that is important to the language user and information that is not important at the same time.

Moreover, an attempt at integration produces significant problems for both practical analysis and cognitive processing theory. If all the suggested devices can be used to code prominence, then inevitably the situation must arise where the proposed correlates would occur in opposition to one another. Just for the purpose of practical analysis, there seems no way to determine which units in such a case would represent prominence. In cognitive processing, the problem becomes more complex, given the added complications of limited memory and attention and time. Confronted with the situation of numerous conflicting coding devices, it is not clear how a language user would decide which discourse units are actually the prominent ones, especially under the constraint of processing discourse in real time. It is not

clear that a processing model produced by the integration of these approaches would be plausible.

2.2 Discourse Grounding Studies

As the above discussion suggests, discourse/event grounding is most at variance to the other approaches. It is also the approach in which by far the most research in discourse prominence has been done. Indeed, discourse/event grounding is the prevalent linguistic theory of discourse prominence. The strength of its currency lies in the fact that the foreground/background distinction seems to correspond to several linguistic distinctions, for instance, high/low transitivity (Hopper & Thompson 1980; cf. Wallace 1982; Weber 1983). Nevertheless, even this research approach does not form a coherent theory of prominence, in that it is plagued by many inconsistencies and conflicting claims among the various studies.

2.2.1 Inconsistencies and conflicts arising from the *Gestalt metaphor*

2.2.1.1 The *Gestalt metaphor*

Discourse/event grounding studies are based on the theoretical distinction of foreground/background -- the linguistic adaptation of a gestalt distinction. In the resulting *gestalt metaphor*, the organization of discourse into foreground and background is conceived of as the linguistic counterpart to figure/ground organization in visual perception. The viability of a gestalt metaphor in language has been argued by several researchers. Talmy (1978), in a discussion of syntactic comprehension, proposed that language is organized as figure/ground. Wallace (1982), in a discussion of grammatical organization, made a similar proposal, but specifically in terms of foreground/background. Reinhart (1984), in an elaboration of the comparison between visual grounding and discourse grounding, extended the argument to narrative text.

Reinhart (1984), which serves as the keystone for the majority of discourse/event studies, contends that visual perception and language processing operate under similar principles. The resulting gestalt metaphor may be summarized thusly:

VISION	⇔	LANGUAGE
⇓		⇓
visual field	⇔	narrative text
spatial organization:	⇔	temporal organization:
figure/ground	⇔	*foreground/background*

In the gestalt metaphor the spatial organization of the visual field as figure/ground has a counterpart in the temporal organization of narrative text as foreground/background.

This correspondence between figure/ground in perceptual organization and foreground/background in discourse organization is a ***fundamental assumption*** in grounding research. A review of this research suggests, however, that the gestalt metaphor is actually the source for some of the major inconsistencies that

characterize the approach and weaken it as a theory. These inconsistencies seem to result from an apparent uncertainty as to both the *nature* and the *degree* of the correspondence between the perceptual distinction and its linguistic counterpart. While it ***may*** well be true that language and visual perception operate with similar principles, it is by no means certain that these principles are identical, or even similar.

The gestalt metaphor can be identified as the source for the inconsistency and conflict related to three issues concerning the fundamental nature of grounding: foregroundable units, binarity, and perceptual neutrality.

2.2.1.2 The *foregroundable units* issue

The first issue involves the linguistic units that can be coded as foreground. Both Talmy's (1978) and Wallace's (1982) proposals argue that figure/ground organization extends to both events and nominals/entities. This has not, however, been carried over into discourse research: discourse/event grounding, as pointed out above, maintains that only main temporally sequenced narrative ***events*** may be foregrounded.

Yet of the two possibilities, event and entity, it would seem that entities are most figure-like and therefore, most easily metaphorically construed in a figure/ground relationship. That is to say, it seems more conceptually difficult to make the metaphoric extension from figure to event than from figure to entity. This focusing on events and disregarding of entities (and of course, the opposite situation in syntax/entity approach) forms a perplexing inconsistency. It seems evident that a theory of prominence achieved through foregrounding which is based on the gestalt metaphor should account for both events and entities -- *if the gestalt metaphor is a valid one*.

2.2.1.3 The *binarity* issue

The second issue concerns the binarity of the grounding distinction -- whether foreground/background is by nature simply binary, or whether it is in some way non-binary. Figure/ground organization in visual perception seems to be binary: something is perceived either as figure or ground; there is no concept between figure and ground. The gestalt metaphor, then, would suggest that correspondingly, there is only foreground/background in language. Many grounding studies seem to accept the extension of binarity from figure/ground to foreground/background, in that by definition and by analytical procedure, they place foreground and background in binary opposition (see for instance, Hopper 1979; Hopper & Thompson 1980).

Other studies, however, have suggested that the distinction is far from a simple one. For instance, Reinhart (1984) suggests that "layers" of foreground/background are possible. A narrative might, for instance, have one layer consisting of the main temporally sequenced events of the narrative, a second layer consisting of the temporally sequenced events of a subplot, and a third layer consisting of the temporally sequenced events in a flashback. Similarly, Ehrlich (1987) suggests that, in addition to main sequential narrative events, there is a layer of events representing characters' viewpoints. Such studies, then, suggest that in narrative, foreground/background exists in a complexity of layers. In these studies,

foreground/background remains in binary opposition -- but the distinction moves from simplicity to complexity.

Findings in still other studies suggest that this complexity actually extends to non-binarity in some way. Several investigations indicate the possibility of scalar grounding, for instance, a tripartite distinction. Tomlin (1985) suggests foreground, background, and pivotal events for English. Fleischman (1985) suggests high foreground, less high foreground, and background for Old French oral narratives. And Bakker's (1991) study of indirect narrative in Ancient Greek suggests salient foreground, less salient foreground, and background.

Other studies indicate that the distinction is actually multiple in some way. Jones and Jones (1979), in a study of Mesoamerican languages, suggest that up to five "levels" of grounding are possible, including ordinary background, significant background, ordinary events, significant events, very significant (pivotal) events, and most significant (peak) events. Longacre (1985) takes a similar view in his work, and offers metaphors such as "spectrum" (Longacre 1981) and "etic bands of salience" (Longacre 1989) to characterize the multiple nature of the grounding distinction. Longacre's "spectrum" is suggestive of a continuum, a possibility that more than one researcher has suggested (cf. Tomlin 1985, Fleischman 1985).

In sum, then, many discourse/event studies suggest that prominence is likely not binary, but rather that it is more probably scalar, or that it approaches a continuum. This is contrary to the expectation of binarity imposed by the gestalt metaphor. The unresolved question that remains, of course, is whether over-analysis in grounding research has resulted in a claim that the distinction is non-binary, or whether the linguistic distinction really does deviate from the visual one, i.e., *the gestalt metaphor is invalid in this instance.*

2.2.1.4 The *perceptual neutrality* issue

The third issue, perceptual neutrality, concerns the notion of salience, and the implication that whatever is foreground and so, more salient, also has greater importance/significance to the language user. As pointed out above, syntax/entity grounding maintains this association between salience and importance, whereas, contrarily, in discourse/event grounding, adherence to the gestalt metaphor forces a disassociation between salience and importance.

Reinhart (1984), arguing for the perceptual neutrality of gestalt principles, points out that just as a figure in visual perception is not more important than its ground, so too, the foreground in narrative is not more important than its background, i.e., figure/ground and foreground/background are methods of organization, not of esthetic evaluation. Moreover, as Backlund (1988) points out, it is impossible to equate foreground with importance and dismiss background as unimportant because background frequently contains information that is *crucial to the narrative* (cf. Kalmar 1982; Chvany 1985; Fleischman 1985; Matthiessen & Thompson 1986; Thompson 1987).

A scrutiny of the grounding research reveals that many discourse/event grounding studies tend, at least overtly, to adhere to the apparent perceptual neutrality of grounding. Some such studies, however, do make occasional reference

to foreground in terms of importance/significance of the information encoded, suggesting perhaps, that these researchers have found the disassociation of importance from salience to be contrary to intuition.

Fleischman (1985) has pointed out that intrinsic importance of an event (which foreground/background does not have) must be distinguished from contextually acquired importance (which the distinction may have) -- i.e., "whatever functions as a figure will acquire importance by virtue of being a 'figure'; its importance is "a contextually determined, hence relative kind of saliency" (858). Nevertheless, while it seems indisputable that foreground does have this relative saliency, it is not so easy to dismiss the intrinsic saliency. In fact, it does seem quite difficult to avoid conceiving of foreground as intrinsically important. Reinhart (1984), for instance, on one hand *argues* for perceptual neutrality -- yet, on the other hand, includes within her "criteria for foreground and background" a criterion of "semantic load", which she elaborates in the following way: "Events that are considered more outstanding, unusual, or important in a given culture tend to be foregrounded more than neutral events" (802).

Indeed, a few other studies seem inclined to disregard the notion of perceptual neutrality. Polanyi and Hopper (1981:2) argue that foreground is more important than background (in terms of the "relative weight of information encoded"). Moreover, they also include importance as a definitional criterion for foreground, as do Weber (1983) and Hwang (1990). In terms of perceptual neutrality, then, there is, evidently, considerable uncertainty as to whether the salience caused by foreground is or can be disassociated from importance, i.e., *whether the gestalt metaphor accurately represents the linguistic facts.*

2.2.1.5 The validity of the gestalt metaphor

The conflicts and inconsistencies, which are visible in these issues pertaining to foregroundable units, binarity, and perceptual neutrality, necessarily undermine the theoretical foundation of discourse/event grounding. It seems evident that the gestalt metaphor is not only the basis of the discourse/event approach, it is also the source of conflict and inconsistency. These problems seem to result directly from a general uncertainty about the correspondence between vision and language. While it seems possible, and perhaps even likely, that language and vision, both being cognitive processes, operate with similar principles, it is not known to what extent this similarity between these cognitive domains holds. Or indeed, if it even does hold to any extent at all.

Consequently, within the gestalt metaphor, in making the metaphorical extension from figure/ground organization in vision to foreground/background in language, it must be questioned whether the *assumed* metaphorical correspondences are actually valid. How much is the foreground/background distinction in language *actually* similar to the figure/ground distinction in vision? In some ways? In only a few ways? And moreover, just how much of the gestalt metaphor is it possible to reject before the comparison becomes invalid and useless?

It is not, however, only the tenuous nature of the correspondences between language and vision that make the gestalt metaphor a questionable foundation for

prominence research. As Wallace (1982) points out, figure/ground seems to be the most simple, most primitive method of perceptual organization; indeed, evidence suggests that it may even be found in newborns. Nevertheless, it must be recognized that even in visual perception, the figure/ground distinction does not account for all the factors contributing to perceptual processing -- for instance, markedness, individual variability, social and cultural influences are not accounted for. Perhaps it is not surprising, then, that (as it will be shown below) this approach demonstrates a tendency towards conflict and inconsistency in the coding devices used to create prominence.

Nevertheless, in spite of all this, the very notion of ***discourse prominence*** is so compelling that it cannot be ignored. Indeed, Longacre (1985:83) argues that:

> The very idea of discourse as a structured entity demands that some parts of discourse be more prominent than others. Otherwise, expression would be impossible. Discourse without prominence would be like pointing to a piece of black cardboard and insisting that it was a picture of black camels crossing black sands at midnight.

It seems so intuitively obvious that some parts of discourse are more prominent/salient than others. The above evidence suggests, however, that although the gestalt metaphor is an extremely seductive and convenient way of conceptualizing that prominence, there is a very real danger that over-reliance on the metaphor could result in constraining or misdirecting research. Consequently, the metaphor should be viewed cautiously and critically, and its validity questioned; it may well be that the gestalt metaphor is not the firmest of foundations for investigating, nor indeed, for building a theory of discourse prominence.

2.2.2 Other inconsistencies and conflicts in grounding research

2.2.2.1 Defining foreground

In addition to these issues arising from the gestalt metaphor, there are other indications of inconsistency and conflict in discourse/event grounding that further call into question its viability as a theory of prominence. One of these concerns the definition of foreground/background, which most typically is stated in terms of narrative events. In accordance with the findings from Labov's work, it is maintained that narrative consists of clauses that are "characteristically ordered in temporal sequence" (Labov 1972:359-60; cf. Labov & Waletsky 1967). Discourse/event grounding, adopting this definition of narrative, considers foreground to be main temporally sequenced narrative events, whereas background is everything else (see for instance, Hopper & Thompson 1980; Reinhart 1984).

While the majority of studies in this approach maintain this as the essential fundamental distinction, several studies, finding it too restrictive, have pointed out that a narrative often includes information which is essential to the main line of the narrative plot, but which is not one of the temporally sequenced events, and thus, would not be considered foreground. Such essential information includes direct speech (Kalmar 1982; Chvany 1985) as well as states (Polanyi & Hopper 1981;

Hwang 1990), and psychological processes (Hwang 1990). These studies argue that such information has the vital function of moving narrative time and/or advancing the plot and cannot, therefore, be regarded as supportive background (cf. Dry 1981, 1983; Bakker 1991). These studies challenge the temporal sequence definition and argue that foreground should be defined more in terms of narrative events/states that advance the plot or that "have significance for the outcome of the action" (Polanyi & Hopper 1981:7). While these alternative definitions tend to increase the subjectivity required in analysis, they nevertheless, provide a more accurate account of narrative foreground.

2.2.2.2 Coding devices

Further conflict and inconsistencies are related to the devices that code foreground. As indicated above, grounding studies maintain that foreground consists of main temporally sequenced narrative events (or perhaps plot advancing events). These events are coded as foreground by specific lexical/morphosyntactic devices. A wide range of such devices have been proposed. While it is evident that these devices tend to both co-occur and conflict, this fact is not generally recognized -- with the possible exception of Weber (1983) who points out that the foreground/ background distinction is "subject to . . . inherent complexity and instability" (7).

Evidence for aspect as a grounding device is suggested in several studies (see for instance, Hopper 1979, 1982; Wallace 1982; Dry 1981, 1982). In fact, the correlation between perfective or completive aspect and foreground actually emerges from the definition of foreground, because the temporal sequencing of events requires that each event be completed before the next event in the sequence can begin. This is also true for tense, another proposed grounding device (cf. Fleischman 1985; Hatav 1985; Hopper 1982), since past tense is another way of presenting a completed event. Contrarily, other studies, using an altered definition of foreground, have produced evidence that present tense and/or progressive aspect may be used to code foreground (Ehrlich 1987; Hwang 1990; Prideaux & Stanford 1990; Prideaux 1991c, 1990).

Another coding device for grounding is transitivity. Hopper and Thompson (1980) present considerable evidence that transitivity consists of ten components or parameters: number of participants, kinesis, aspect, punctuality, volutionality, affirmation, mode, agency, object affectedness, and object individuation. Each parameter measures the degree with which an action is transferred, and in combination, they characterize an action as being either high or low in transitivity. High transitivity correlates with foreground and low transitivity with background.

Several studies, however, challenge various aspects of this claim. Rice's (1987) work in cognitive syntax questions these parameters as the basis for transitivity, and suggests a rather different configuration of transitivity which is based on the argument that transitivity is not definable simply in structural terms, and that construal factors imposed by speaker and context contribute to the meaning of the clause and, therefore, to transitivity. As well, Chvany (1985) argues that in actual analysis, the transitivity scale is not sensitive enough. It does not, for instance, allow for direct speech to occur in foreground, and direct speech, Chvany argues, must

always occur in foreground: "The well-known ability of direct speech to eclipse the material that introduces it illustrates an icon of foregrounding" (1985:8; cf. Kalmar 1982).

Other studies point out that, in practical analysis, the transitivity scale poses difficulties. Hatav (1985) remarks on the ambiguity of the parameters of kinesis, agency, affectedness, and individuation, and questions the relevance of other parameters for establishing foreground. She points out that punctuality, for instance, is irrelevant in the case of durative verbs (e.g., Jacob *served* seven years for Rachel) which, by nature, involve a transition -- i.e., it is necessary to consider the meaning of the clause rather than simply the structure (cf. Rice 1987 above). Hwang (1990) makes a similar point about the affirmative parameter, suggesting that an expectancy reversal or sudden change of state belongs more properly to the foreground. Prideaux and Stanford (1990) suggest that implementing the transitivity scale poses something of a methodological problem in that, in analysis, some of the parameters depend greatly on subjectivity.

Still another grounding device that has been proposed is clausal dependency. Several studies indicate that foreground correlates with main/independent clauses, and background with subordinate/dependent clauses (Talmy 1978; Wallace 1982; Reinhart 1984; Longacre 1981; Chvany 1985; Thompson 1983, 1987; Tomlin 1985; Backlund 1986). This correlation between dependency and grounding is, however, not a perfect one, and such studies typically find that a small portion of the dependent clauses tends to carry foregrounded events.

A possible explanation for this is that dependent clauses do not form a homogeneous group; for instance, preposed and postposed clauses tend to function in rather different ways (cf. Thompson 1987; Chafe 1984; Haiman & Thompson 1984; Prideaux 1989, 1992). However, results of other studies provide a greater challenge for the claim of a correlation between dependency and grounding. Fleischman (1985) found that in Old French oral narrative, which is characterized by paratactic organization, both foreground and background occurred in main clauses. Similarly, Bakker (1991) found that in Ancient Greek indirect narratives, main clauses contained both foreground and background. Yet another study, Prideaux and Stanford (1990), also found both foreground and background in the main clauses of both oral and written narratives in English (cf. Dry 1983; Hwang 1990).

Still other research suggests that a combination of lexical and morphosyntactic devices are used to code grounding. Jones and Jones (1979) describe Mesoamerican languages in which foreground/background are coded on several levels. Coding in these languages may occur through a wide range of coding devices, including particles, affixes, aspect, tense, mode, lexical paraphrase, and repetition. Longacre (1981, 1985, 1989) takes a similar approach in his work in English and other languages.

Polanyi and Hopper (1981) view grounding as rather more encompassing in nature and propose that a communicator may choose from a wide variety of coding devices, including lexical/morphosyntactic devices (such as those suggested in the research), as well as devices such as repetition, expressive phonology, variation in clause length or complexity, distinctive lexical use, and deviation from script/frame.

Their list of correlates subsumes the devices in other studies and expands it with proposals such as the correlation between foreground and frame-breaking events. Such a conclusion is well-motivated on the basis of prior research; however, the increase in possible grounding devices is matched by an increase in the potential conflict between co-occurring devices.

Another suggested correspondence between grounding and the events in a frame/script is also found in Longacre (1981) and Weber (1983). Longacre suggests, for instance, that background events are "script-predictable". This seems reasonable. However, a script or frame (or event schema) consists of the main temporally sequenced events of an activity (see for instance, Anderson 1990); therefore, since foreground consists of main temporally sequenced events, all events in a script must be included in the foreground. Yet if foreground is only frame-breaking events, whereas background is frame-supporting or script-predictable events, then those events belonging to the script/frame are frame-supporting and therefore background. Remarkably, then, this makes script/frame events *both foreground and background* simultaneously.

Weber (1983) also suggests that the coding of grounding is accomplished through a range of coding devices, and proposes a list of devices that subsumes Polanyi and Hopper's (1981) as well as those suggested in other grounding studies, such as Talmy (1978), who suggests that foreground correlates with assertion and background with presupposition. Weber admits that the foreground/background distinction is to some degree "subject to . . . inherent complexity and instability" (7) -- i.e., the coding devices tend to co-occur and conflict. He argues, however, that the best way to determine grounding patterns in a narrative is to determine which information is *most foregrounded* by the devices suggested in grounding research by assessing to what degree the information is transitive, framebreaking, etc.

Weber's proposal seems to be the obvious way to solve the problem of conflicting and co-occurring coding devices. However, it is based on the assumption that all grounding devices are equal in their foregrounding effects, or that the degree of foregrounding for each correlate can somehow be determined empirically. Further, this assumption is based on the assumption that all these devices do indeed function to code grounding and so, have cognitive validity for language users, i.e., that speakers actually use them to code foreground, and correspondingly, hearers actually use them to determine foreground.

2.2.3 The viability of discourse/event grounding as a theory of prominence

Given the above considerations, then, it seems evident that discourse/event grounding does not form a coherent theory of grounding. Not only is the research plagued with inconsistency and conflict, but there is considerable motivation for questioning the soundness of the gestalt metaphor which is not only the keystone of the approach, but also the source of many of the conflicts. Viability of discourse/event grounding as a prominence theory must be further reduced by the essentially circular argument that links foreground to its discourse correlates, and as well, by the facts that the approach is restricted only to the prominence of *events*, and that it is relevant only for *narrative* discourse.

Still further motivation for questioning the viability comes from an indication that, in spite of the numerous studies and the numerous correlates that have been proposed, at least some of the correlates may not have cognitive validity -- i.e., it may be that, in discourse processing, communicators do not actually use the devices to code foreground. This indication of the questionable cognitive validity of devices comes from cognitive discourse studies.

Discourse/event grounding is, essentially, based on an argument that foreground consists of main, temporally sequenced, narrative events that are coded with one or another device. In the vast majority of these studies, however, it is more than evident that there is circularity in the argument. Only a few studies have used an *independent* measure of foreground. One was Tomlin's (1985) study which examined grounding in terms of clausal dependency. The two other studies were Prideaux and Stanford (1990), which examined oral and written narrative in English, and Prideaux (1991c) which examined oral narrative in English.

These latter two cognitive studies avoided circularity by using subject responses to determine which events are foregrounded (foreground was operationally defined as events mentioned by 75% of the subjects). Based on the results from prior grounding research, it would be expected that these studies should also find that foreground is coded with past tense, perfective aspect, and main clauses. However, the subjects in this study acted quite contrarily to these expectations. Foreground was found to be coded more often in *present* tense and *progressive* aspect, than in past and perfective, and further, *both* foreground and background were found to occur in dependent clauses, rather than only background.

The communicators acting as subjects in the cognitive studies, then, seem to be using some other means of identifying foreground than is suggested by grounding research. The results of such studies, which are much at variance with other grounding studies, suggest that, from a discourse processing perspective, the discourse/event approach has produced at least some questionable results. This is, perhaps, not surprising since these studies have not taken language processing into consideration.

It must be stressed that the findings of the cognitive studies do not necessarily *nullify* the results of the discourse/event grounding studies. What the cognitive research does suggest, and quite resoundingly, is that *the grounding research has not discovered everything about how communicators create and use discourse prominence*. Some, or all, of the findings of discourse/event studies may very well be valid, but there is, evidently, a great deal more going on than these studies have been able to ascertain. Moreover, what the cognitive research also indicates with crystal clarity, is that *nothing about prominence and how communicators use prominence can ever be understood accurately unless cognitive factors are considered*.

2.3 The theoretical status of discourse prominence

Prominence research has not, then, produced a coherent theory of prominence. Indeed, these various approaches seem to agree on only one fact --

discourse has prominence. Nevertheless, whatever prominence is, and however it occurs, it is quite evident that it does not exist beyond the language user. Indeed, any claim of prominence in discourse evokes the unavoidable questions: ***prominent to whom? prominence created by whom? where? how? why?***

Prominence originates with the language user. It follows, then, that an adequate assessment of the phenomenon (i.e., a theory of discourse prominence) should minimally be able to characterize prominence in terms of (1) its fundamental nature, (2) how and why the speaker codes it, (3) how and why the hearer uses it, and (4) how it functions in discourse. Moreover, it should do so for *all* types of discourse. Measured in terms of the these minimal, and not unreasonable, goals for a theory of prominence, it seems evident that the research approaches discussed above are far from achieving a viable theory of prominence, either together or separately.

Suppose for a moment that we decided to integrate this research to form a unified theory. The result would be a theory in which a variety of discourse units could be coded in a variety of ways, and all would represent prominent information. It might be argued that a possible explanation for the diversity of codable units and coding devices is that each approach represents a different type of prominence -- thematized entity, thematized NP/adverbial/wh-word/etc., narrative event, unit of literary relevance. But there still remains the unresolved conflicts and inconsistencies that render the resulting theory incoherent. Moreover, the fundamental nature of prominence remains unclear. The function of prominence in discourse remains unclear. The relevance of prominence to the speaker and hearer remains unclear. Furthermore, even the integration of the approaches does not account for prominence in *all types of discourse*.

Given the available evidence, then, the most that can be said of the theoretical status of discourse prominence is that prominence is not well understood. Prior research may, or may not, have produced valid evidence about the phenomenon, but even if these findings are accepted as valid, the resulting prominence theory is one that is riddled with conflict and inconsistencies and uncertainty. It remains a void that must necessarily be filled in the development of a theory of discourse processing.

Notes

[1] As a brief aside, it might be noted that Halliday's work (see for instance 1967, 1968) includes a discussion of prominence achieved through prosodic means. This work suggests that pitch prominence is related to the management of given/new information, in that it is used to mark the focus of new information. However, pitch also seems to be used to mark the initiation of a speaker's turn, the start of a new topic, emphasis, and contrast. As well, at least one study has examined pitch phenomena as specifically a *grounding device*. Kumpf (1987) looked at the relation of pitch to narrative structure, and found that more prosodic prominence was given to *non-event* material. This would seem contrary to the expectations in grounding studies which equate foreground with prominence, and hold that only *events* are

candidates for foregrounding status. Such intonation studies potentially form a distinct approach to the study of prominence (see also Brown, Currie, & Kenworthy 1980; Cruttenden 1986; Ladd 1980; Couper-Kuhlen 1986; Bolinger 1986). However, these studies have produced little in the way of clear results, perhaps largely because intonation serves so many different systems (see Brown et al. 1980 and Tench 1990 for a discussion of this). Thus, although it seems evident that prosodic factors do play a role in prominence coding, the ambiguous nature of the findings places these studies on the periphery of discourse prominence research, at least for the present. For the purpose of this survey, these studies will not be considered a major research approach to prominence, and will not be discussed beyond the above brief summary.

Chapter 3

Rhetorical devices, markedness, and the prominence strategy

3.1 The role of rhetorical device type structures in discourse processing

The prominence phenomenon in discourse is, then, not at all well understood. This appears to arise from the fact that the vast majority of prominence studies have not considered cognitive factors. Again, the critical issue is this: Given that some discourse units are more prominent than others, it must be acknowledged that prominence does not exist in a void. The crucial and unavoidable question is:

What is prominent (i.e., important/significant) to the language user?

It may well be that ***not*** only temporally sequenced narrative events are important to language users -- or only NP-entities, or only sites of literary relevance, or only thematizable units. In fact, it may be that these approaches do not account for all that a language user might deem important or significant in a discourse.

Indeed, it might very well be that one of the reasons why the cognitive grounding studies (Stanford & Prideaux 1990; Prideaux 1990, 1991c) found results so much at variance to other grounding studies is that there are *other ways of coding prominence* than has been detected in the research. Evidently, the participating subjects, unrestrained by theoretical notions of foreground, instead identified prominence as they would during normal discourse processing.

It is particularly interesting that Stanford and Prideaux (1990) found that one of the coding devices used by subjects was *inference* (see Weber 1983 for another mention of an encounter with inference in grounding). Inference is suggestive of rhetorical devices, which, it has been claimed, can affect interpretation. Indeed, it is interesting to note that rhetorical devices, as devices for coding prominence, have also been implicated (either directly or indirectly) in other prominence studies. For instance, in lit/style grounding studies, rhetorical devices are, of course, one way of achieving literary creativity.

As well, implications can be found in two discussions of staging. In Grimes' (1975) description of staging, it is suggested, although rather obliquely, that markedness is in some way involved in staging. He points out, for instance, that: "Whenever anything is put first in the clause other than the element that normally signals the mode, it constitutes a marked topic in English" (326). Such a marked topic might be in a fronted constituent. Rhetorically speaking, the fronting of a constituent (causing a deviation from basic word order) is an instance of the rhetorical device, *hyperbaton* (cf. 3.2). Similarly, in a review of discourse structure studies, Brown and Yule (1983) regard staging in more expansive terms. Such a

view of staging, they suggest, "permits the inclusion within staging of rhetorical devices like lexical selection, rhyme, alliteration, repetition, use of metaphor, markers of emphasis, etc." (134).

In discourse/event grounding, there are two more discussions that implicate rhetorical devices. Longacre's (1981, cf. 1985) proposal of multi-leveled grounding includes a level of "discourse peak" (i.e., the climax of the narrative action). This peak, he suggests, is marked by "rhetorical underlining" in the form of devices such as repetition, paraphrase, shift in tense, onomatopoeia, a "packing" of the action line, etc. (1981: 349; 1985: 96). *Repetition, paraphrase,* and *onomatopoeia* are all devices in the classical rhetoric tradition. Similarly, in Polanyi and Hopper's (1981) discussion of grounding devices, they argue that "foreground suggests a notion of important" that is associated with "the relative weight of the information encoded in the clause" (1). As such, they suggest, foreground may be coded by morphological and lexical coding devices as well as "devices such as repetition, expressive phonology, variation in clause length or complexity, distinctive lexical use, etc." (3). Since they do not expand on this suggestion, it is difficult to know what is meant by most of these terms; however, "expressive phonology" may refer to *onomatopoeia* (sound symbolism), "variation in clause . . . complexity" is suggestive of *hyperbaton* (constituent shift), and of course, *repetition* is a rhetorical device of some note.

In such prominence studies, then, rhetorical devices are either mentioned, or their presence is in some way implied. However, rhetorical devices are not, of course, commonly considered to be prominence coding devices in either staging or grounding, except perhaps in the lit/style grounding approach. Indeed, outside the lit/style grounding approach, only a very few studies, like those above, have even mentioned them -- and none with any degree of elaboration. Nonetheless, although rhetorical devices have been virtually ignored in prominence research, it does seem likely that these devices are prime candidates for coding discourse prominence. Notice that prominence is, specifically, the phenomenon in which discourse units *differ in perceptual salience*. Rhetorical devices produce marked linguistic usages which are, by nature, *high in salience*.

Possibly the most complete documentation of such marked linguistic usages can be found in classical rhetorical theory. Classical rhetoric differs markedly from modern rhetorical theory. Modern rhetoric is far from a unified theory; there is much conflict and dissension about, for instance, what rhetoric is, what it should be, what its objectives are, and what directions the theory should take in the future. The theory tends to be concerned primarily with such issues as the intricacies of argumentation and prescriptive usage, in the sense of "how to write well". Typically, little attention is given to rhetorical devices (if a modern rhetoric includes such devices at all, it is usually as a listing of a few common schemas and tropes, often in the appendix), and typically no attention is given to the motivation for the using the devices, i.e., why/how they function. The theory is not linguistically oriented, and seems to bear only the most tenuous of relationships to a cognitively-based theory of discourse.

In classical rhetoric, on the other hand, it is possible to recognize the cognitive basis of the theory. Unfortunately, however, that evidence is quite sparse. In the

course of time, over the hundreds of years that rhetoric has been studied, the actual evidence (i.e., the motivations for rhetorical usage) seems to have faded in importance, perhaps because the focus of rhetoricians shifted more and more to, for instance, the intricacies of argumentation. Nevertheless, *classical rhetorics* do demonstrate an awareness that rhetorical usage works because it affects comprehension. Moreover, perhaps because classical rhetoric is closer to the roots of the theory, it also provides some documentation of the cognitive motivation for rhetorical devices. Such insights, of course, would be relevant for discourse research and theory, and in particular, for the prominence phenomenon under investigation here.

3.2 Classical rhetorical theory and discourse processing

3.2.1 The relevance of classical rhetoric to discourse processing research

Psycholinguistic investigations into language processing suggest that discourse processing is subject to cognitive limitations. These limitations (such as the small capacity of working memory) give rise to certain discourse strategies that constrain the distribution of information in discourse (see also 3.3.2). Essentially, then, discourse is the consequence of the communicator's strategic management of information during discourse processing. Current discourse processing theory has a incipient parallel in classical rhetoric, an ancient theory of information management developed by the ancient Greeks and appropriated by the ancient Romans.

Classical rhetoric was founded and built on empirical observations of communication in action (such as those by Gorgias in fifth century B.C.). These rudimentary "experiments" tested the effect of variations in communication, and evaluated them to determine the most effective means of communication. The result of this early discourse research was the classical rhetorical theory recorded in works such as Aristotle's *Art of Rhetoric*.

Such classical rhetorics document the theoretical rules for systematically and scientifically constructing a communicatively effective message. They also provide some record of the *motivation* behind rhetorical usage. Essentially, classical rhetorical theory is based on the recognition that communication operates under significant limitations, especially those imposed by limited memory and attention. Rhetorical usage is based on an awareness of these limitations, and it is designed to manipulate communication variables, towards the objective of overcoming the limitations and creating a maximally communicatively effective message.

In the rhetorical system, a speaker produces a message that is maximally communicatively effective by controlling variables that affect the hearer's comprehension. The primary concern during message construction is that nothing impede the hearer's comprehension of the intended meaning. Towards this end, rhetorical theory provides for what we might, in psycholinguistic terms, refer to as *the strategic encoding of the message* -- thus enabling the speaker to engage, maintain, and manipulate the hearer's attention. Message construction involves, for instance, a series of strategic steps that focus on communication variables, each of which may be manipulated towards creating a message that is maximally communicatively effective (i.e., easy to comprehend). This includes the control of a variety of communication

variables, for instance, attitude, affect, and various factors associated with the nature of information (such as density, complexity, rate, order, length, given/newness, topicality). The process also is sensitive to the speaker:hearer and the writer:reader relationships, the situational context, and the mode of communication.

Essentially, then, rhetorical usage involves the manipulation of communication variables, including information complexity, context, attitude, and affect, to overcome such processing limitations as those associated with memory and attention. This is all directed towards the primary goal of facilitating comprehension, which is integral, of course, in the effective communication of the speaker's message. Given the essentially cognitive basis of classical rhetorical theory, it seems evident that the theory may very well offer a variety of insights into such processing issues as memory, attention, and communication variables, as well as the consequences of their manipulation in communication. These insights, of course, have particular relevance for discourse theory and research. Of particular interest to this investigation is the function of rhetorical devices.

3.2.2 The cognitive basis of rhetorical devices

The classical documentation of rhetorical devices cannot, unfortunately, be characterized by either completeness or consensus. Although classical rhetorics propose hundreds of devices, the precise number is uncertain. This arises from two causes. First, the legitimacy of many of the proposed devices was disputed even in ancient times; Quintilian, for instance, includes a list of devices which other rhetoricians had proposed, but which he believed did not properly qualify as rhetorical devices. Second, various writers often label the same device differently -- an unfortunate practice that has persisted through the centuries. For instance, Aristotle gives the label of *antithesis* to a discourse unit in which contrasting notions are balanced in parallel structures, as in for example:

1. Fame or notoriety, riches or poverty, triumph or tragedy -- no matter the consequences, he pushed the button to activate the time machine.

However, such balanced parallelism of contrasts has also been called *antitheton, contextio, contraposition, oppositio, syncrisis,* and *quarreller* (see for instance, Lanham 1968; Taylor 1972).

It is also unfortunate that classical rhetorics do not reveal the cognitive basis for rhetorical devices with any degree of elaboration. This omission is, perhaps, because the early documentation was lost, perhaps because it became unimportant when focus shifted to other issues, perhaps because rhetorical devices form a rather diverse group and so, cannot be concisely characterized in such terms. Nevertheless, within the classical rhetorics there is the suggestion that the function of rhetorical devices is to facilitate comprehension, and that this is accomplished through effects on memory and attention. Consider again *antithesis*, the device in which contrary notions are juxtaposed, usually in some balanced structure, for instance:

2a. That's one small step for a man, one giant leap for mankind. [Neil Armstrong, as he stepped onto the moon, 20.07.69]

2b. I take thee . . . for better or for worse, for richer or for poorer, in sickness and in health, to love and to cherish . . . [vows from *The Order of Marriage*]

Aristotle suggests in *Rhetoric* (III.9.20) that in *antithesis* "the significance of contrasted ideas is easily felt, especially when they are thus put side by side", and in the *Art of Rhetoric* (III.ix.7-10) that the device makes information easy to understand and remember because it places contrary notions in a clear concise juxtaposition. He also suggests that devices based on comparison and contrast, of which *antithesis* is one, tend to strike us with greater impact because they surprise us with something unexpected. This suggests the type of effect that such devices have on attention.

A further example is *apocrisis*, a device for reasoning by question and answer. A form of this device, using a succession of question/answer pairs, is used abundantly in Paul's discussion of justification by faith in the *New Testament*, a small portion of which is provided below:

3. Then what becomes of our boasting? It is excluded. On what principle? On the principle of works? No, but on the principle of faith. For . . . a man is justified by faith apart from works of law. Or is God the God of Jews only? Is He not the God of Gentiles also? Yes, of Gentiles also, since God is one . . . . Do we then overthrow the law by faith? By no means! On the contrary, we uphold the law . . . . [*Romans* 3:27-31]

The (unknown) author of the *Ad Herenium* (IV.xv.22-24) suggests that this device holds attention because it increases the involvement of the hearer: "we ask ourselves the reason for every question we make, and seek the meaning of each successive affirmation"; and this "by its stylistic grace and the anticipation of the reasons, holds the hearer's attention". An additional insight about this device comes from Longinus, in *On the Sublime* (18.1-2) who tells us that "the enthusiastic and rapid quality of the question and answer" simulates a state of high emotion.

This simulation of high emotion is a quality attributed to a variety of devices, including *hyperbaton* and its related device *tmesis*. The *hyperbaton* represents an intended departure from the usual word order, usually by displacing a constituent either to the beginning of a clause (as in 4a) or to the end of a clause (4b) or elsewhere within the clause (4c):

4a. *That movie*, I think you will enjoy.

4b. The children were taken in, *starving and weary*.

4c. The children, *starving and weary*, were taken in by a sweet old lady who lived a gingerbread house.

In *tmesis*, a word is inserted within a word, for instance,

5a. He got the formula off a barman in Marrakesh or *some-bloody-where*. [McClellan 1977]
5b. That's *im-bloody-possible*!

Longinus (*On the Sublime*, 22.1) argues that such hyperbatic devices are strongly suggestive of a highly aroused emotional state:

> These are an excited arrangement of style or conception out of natural sequence and are, as it were, the truest stamp of struggling emotions. You see . . . those who in reality are angry or frightened or under pressure from an emulous character or from some other emotion . . . completely change the arrangement of their style and cast of thought from their natural sequence . . .

The sort of syntactic variation created by hyperbatic devices seems, then, to engage attention for two reasons. First, because they indicate a potential site of high emotion; second, because the syntax is marked, and therefore unexpected.

Asyndeton and *polysyndeton* are also devices of syntactic deviation. In *asyndeton*, conjunctions are suppressed during the linking of such constituents as clauses (6a), noun phrases (6b), or prepositional phrases (6c):

6a. I came, I saw, __ I conquered. [Julius Caesar]
6b. He wanted fame, wealth, __ power. He found notoriety.
6c. . . . that government of the people, by the people, __ for the people, shall not perish from the earth. [from Abraham Lincoln's *Gettysburg Address*]

In *asyndeton*, Longinus tells us, "what is spoken falls out and, as it were, pours itself forth", with the result that it tends to "carry a clear suggestion of action" (*On the Sublime*, 19.1). The author of *Ad Herenium* suggests that the resulting quality of "animation" grabs the attention (IV.xxx.41; cf. Aristotle, *Rhetoric*, III.12.19-20). However, it also produces a concise expression of an idea -- and conciseness, as Aristotle frequently reminds us, makes things easier to remember.

Polysyndeton represents the insertion of conjunctions where none would normally occur, for instance between clauses (7a, 7b) or between noun phrases (7c):

7a. I came *and* I saw *and* I conquered.
7b. The crew was wet *and* they were cold *and* their muscles ached *and* their eyes stung from the salt water *and* the finish-line was still nowhere in sight.
7c. I thought about the plumeria blossoms, *and* the warm caress of the sun on my skin, *and* the eternal ocean waves, *and* the endless miles of sandy beaches.

Whereas *asyndeton* has an effect of animation or speeding up action, *polysyndeton* has the opposite effect -- that of slowing things down. Compare 6a and 7a, and consider them against:

7d. I came, I saw, and I conquered.

With *asyndeton* the hearer receives the information quickly, concisely; with *polysyndeton* the process is slowed, and an accumulation of information is offered gradually. Longinus (*On the Sublime* 21.1) suggests this produces an effect of enforced restraint on the emotions: "You see, just as if someone connected the bodies of runners together, he would remove their rapidity, so emotion also feels the pressure when the connectives and other insertions impede them". This may, in fact, suggest an iconicity effect for this pair of devices -- the linguistic form (presence or absence of conjunctions) represents the meaning (speeding or slowing of action, or the like).

Such suggestions provide a clue to how rhetorical devices operate. Unfortunately, the classical rhetorics (at least those that have survived over the centuries) do not elaborate greatly on the cognitive basis of rhetorical devices. Nevertheless, based on what they do suggest, it seems reasonable to speculate that the ability of rhetorical devices to affect comprehension might very well be related to their intrinsic salience. In fact, a close scrutiny of the devices reveals that each is based on one or a combination of potential comprehension effects: *primacy, recency, deviancy* (i.e., *markedness*), and/or *frequency* as well as, possibly *chunking* and *iconicity*.

For instance, *antithesis* and other devices of comparison and contrast, which as Aristotle suggests violate our expectations, are based on what might be called deviancy or markedness. In addition, the balance of idea and structure that is typical of antithetical juxtaposition is also a type of repetition, and particularly in cases where this balance is repeated several times, as in 2b above, *antithesis* may also be based on a frequency effect. As well, it is likely that the neat packaging, that is typical of a balanced structure, also provides a pre-chunking of the encoded information which results in enhancing recall. Similarly, the device of *apocrisis* (as in 3 above) is also based on markedness, since in the norm, it is not expected that a speaker will pose a question and then answer it. If the question and answer pattern is repeated several times in succession, or even within the same discourse, this device might also have a frequency effect.

Hyperbatic devices such as *hyperbaton* (4) and *tmesis* (5) also create linguistic forms that have a potential markedness effect. In the case of *tmesis*, it is not expected that a word will be inserted within a word. In the case of *hyperbaton*, it may be argued that a basic word order is expected. Typological studies suggest that in English, for instance, basic word order in declaratives is S>V>O; that adjectives precede nouns, and so forth (see for instance, Hawkins 1983; cf. the Transformational Grammar notion of basic structure; markedness will be further discussed in 3.4). Violations of this norm are expected to be less frequent than the norm. In addition to markedness, since the typical *hyperbaton* consists of displacing

a constituent by shifting it to the beginning or to the end of the clause, it may also be that an additional primacy effect could occur for fronted constituents, while an additional recency effect could occur for end-shifted constituents.

In the case of *asyndeton* and *polysyndeton*, the absence of conjunctions where they are usually expected and the presence of conjunctions where they are not usually expected makes them devices based on markedness. Both devices also seem to have a type of iconicity effect in that the structures represent iconically the slowing or speeding of time. As well, an additional frequency effect is evident, since both tend to incorporate a repetition of constituent type or structure. *Polysyndeton* also allows repetition of adjunction with its associated meaning of accumulation.

A co-occurrence of devices seems not to be unusual. Several of the examples, in fact, exhibit this. In example 1, *hyperbaton* occurs twice with two constituents fronted; example 2a also includes *asyndeton*, and so on. Most often, however, as in the cases mentioned above, it is repetition that will be found to co-occur with other devices, and with it will be found the associated frequency effect. Indeed, many rhetorical devices are based on or incorporate some form of repetition -- repeated lexical units (in whole or part), repeated structures, or repeated ideas.

Epimone describes the most common type of repetition, the kind that occurs intermittently throughout a discourse, i.e., at the macrolevel. Consider, for instance, the echoing of the clause *I have a dream* in Martin Luther King Jr.'s famous civil rights speech (20.08.63), a small segment of which follows:

> 8a. I have a dream that my four little children will one day live in a nation where they will not be judged by the color of their skin, but by the content of their character.

Epizeuxis describes repetition that occurs more locally, at the microlevel; a constituent is repeated immediately or in close proximity to its first occurrence:

> 8b. *Never give in, never give in, never, never, never, never* -- in nothing great or small, large or petty -- *never give in* except to convictions of honor and good sense. [Sir Winston Churchill, from *The Address at Harrow School*, 29.10.41]

In *epanaphora* the repetition occurs at the beginning of the successive discourse units as in:

> 8c. Finally, brethren, *whatever* is true, *whatever* is honorable, *whatever* is just, whatever is pure, *whatever* is lovely, *whatever* is gracious, *if there* is any excellence, *if there* is anything worthy of praise, think about these things. What you have learned and received and heard and seen in me, do; and the God of peace will be with you. [*Philippians* 4:8-9]
>
> 8d. *We shall* not flag or fail. *We shall* go on to the end. *We shall fight* in France, *we shall fight* on the seas and oceans, *we shall fight* with

> growing confidence and growing strength in the air, *we shall* defend our island, whatever the cost may be, *we shall fight* on the beaches, *we shall fight* on the landing grounds, *we shall fight* in the fields and in the streets, *we shall fight* in the hills; *we shall* never surrender. [Sir Winston Churchill, from *The Speech on Dunkirk*, House of Commons, 4.06.40]

As in the examples above, this tends to create a type of a balanced structure or *parisosis*. Such balanced structures may also occur in *epistrophe*, where the repetition occurs at the end of successive discourse units, for instance:

> 8e. When I was *a child*, I spoke like *a child*, I understood like *a child*, I thought like *a child*: but when I became a man, I put away childish things. [*I Corinthians 13:11*]

Parisosis, which represents a balanced structure, is also a device of repetition, since it involves the repetition of a structure. As well, *parisosis* can frequently be found to occur simultaneously with other rhetorical devices. This is the case in the above examples for *antithesis*, as well as for *polysyndeton, asyndeton, epanaphora*, and *epistrophe*, as has already been noted. In addition, it may well be the case that (like *antithesis*) *parisosis'* repeated balanced structures also pre-package information into chunks, thus facilitating recall. Consider also that rhetorical devices based on repetition make use of the frequency effect on memory -- the more often something is heard, the better it is remembered. Such repetition, it might also be argued, is itself outside the norm to some degree, and results in a kind of deviancy or markedness that grabs attention.

Such evidence suggests, then, that rhetorical devices seem to function through one or a combination of effects on comprehension: *primacy, recency, deviancy/markedness, frequency*, as well as *iconicity* and *chunking*. Specifically, rhetorical devices represent marked linguistic forms, which through these effects, increase the saliency of the information that they encode, thereby drawing attention to it, and since what is better attended to is also better remembered, their characteristic salience results in better comprehension.

Further to the comprehension issue, it might well be noted that the classical rhetorics all warn that rhetorical devices should be used judiciously. This warning is not elaborated in any great detail; frequently, it is served up more as reminder -- rather as if it is a type of given (i.e., culturally shared) information, with the implication being that the reason for the judicious use of devices is already known to the reader. In some cases it seems to be simply a warning against too much 'ornamentation' (in some of the later rhetorics, especially the classical Roman, the role of devices was regarded largely as ornamentation). It seems evident, however, that the most judicious, i.e., *effective*, use of the devices would be to draw attention to information that is most *important/significant*. Coding important information by rhetorical devices would ensure that the hearer's attention would be drawn to critical information that should be used to interpret the speaker's intended meaning.

Rhetorical usage may be regarded then, as a refinement of natural language usage based on a heightened awareness that manipulation of communication variables can facilitate comprehension. The same communication variables occur, of course, in naturally occurring discourse. As a consequence, rhetorical theory may provide useful insights regarding many aspects of discourse processing. Indeed, rhetorical devices may be related in some way to the strategies employed by the language user during discourse processing -- strategies such as the prominence strategy which is the focus of this research.

3.3 Discourse processing and the prominence strategy

3.3.1 Evidence from psycholinguistic research

As we saw above, classical rhetorical usage is designed, essentially, to facilitate comprehension through the manipulation of effects on memory and attention. Both memory and attention are, of course, recognized in processing theory as major cognitive limitations that language users must contend with during discourse processing (see for instance, Carroll 1986; see also 3.3.2). As we also saw, in classical rhetoric, the strategic manipulation of information to overcome these limitations eases comprehension. This facilitation effect is achieved with various devices -- at least some of which appear to function by increasing salience. As was pointed out above, there are a range of comprehension effects involved in this procedure: primacy, recency, deviancy/markedness, and frequency, as well as perhaps, chunking and iconicity.

The effect on recall of primacy and recency (cf. the serial position effect), as well as the effect of frequency are well documented. We tend to recall well information that is encountered frequently, and encountered first or last. The effect of iconicity on comprehension has not been widely studied; however, Prideaux (1990) posits the presence of an iconicity constraint for the order of events in discourse processing, i.e., "structures which more directly mirror or map the events they represent are easier to process than those which do not" (2). (For further discussions of iconicty and/or order of events, see Itagaki 1994; Prideaux & Yoshida 1994; Virtanen 1992; Brown & Yule 1983; Enkvist 1981; Firbas 1979; Clark and Clark 1977, van Dijk 1977). Thus it may well be that processing facilitation also occurs for other types of iconicity. For instance, comprehension might well be facilitated in the case of devices such as *polysyndeton* and *asyndeton* (in which the structure itself carries an attendant meaning that echoes in some way the intended meaning). It certainly seems likely that the iconic slowing or speeding of time would be marked, and so, would draw the hearer's attention.

In terms of deviancy/markedness, evidence from psycholinguistic research indicates that deviating from what is expected affects both attention and recall. Clark and Clark (1977), as well as Chafe (1977), suggest that unexpectedness in discourse contributes to saliency or information value. Kemper and Thissen's (1981) study of politeness, and Kintsch and Bates' (1977) study of jokes and asides in lectures, both show that when the wording violates expectations, recall is facilitated. As well, Keenan, MacWhinney, and Mayhew's (1977) study shows that it is not only the unexpectedness of jokes/asides, but also their relevance to the point being made that

affects recall -- i.e., importance is a critical factor. Such studies as these, indicating that violations of expectations affect comprehension, suggest that the non-canonicality associated with rhetorical device type structures may have a similar effect on comprehension. The Keenan et al. study, which shows a link between unexpectedness and intended meaning, is further suggestive of the function of marked linguistic forms that is being proposed here, i.e., in conveying information that is important to intended meaning.

It has been suggested that rhetorical devices can affect comprehension not only through recall, but also through interpretation. Of course, it seems apparent that one way of affecting interpretation is by controlling which information is recalled. Another more direct way, however, is through implication, perhaps as it is supplied by marked structures. A link between implication and marked structures is suggested by Davidson's (1980) study of passives which found that the more marked a construction is, the more likely it is that an implied meaning is intended. For instance, *This chair was sat on by Fred* carries the implication that the effects of Fred's sitting are in some way visible, whereas *Fred sat on this chair* is neutral. Davidson argues that the marked presence of a non-subject in subject/topic position functions to invite inference. It might be then, that markedness of the rhetorical device type also carries implications that are used to affect interpretation. It is further possible that rhetorical usage may affect interpretation more directly, through devices which are specifically intended to carry implication, devices such as *aporia* (which describes the omission of talking about something by talking about not being able to talk about it) and *diabole* (which describes the prediction of consequences or outcome). Both these direct and indirect means of encoding implication may affect interpretation and may be used to convey intended meaning.

Such evidence suggests, then, that marked forms typical of rhetorical devices may affect comprehension through affects on attention and recall/interpretation. The function of such marked structures in creating prominence is part of the strategic management of information during discourse processing.

3.3.2 Strategic information management during discourse processing

Cognitive studies of language have revealed that comprehension and production processes are subject to certain cognitive limitations, for instance, those associated with memory and attention (see, for instance, Carroll 1986). Implications that cognitive limitations such as memory and attention have for discourse processing have been examined in discourse investigations such as Prideaux 1991a (see also Prideaux 1989, 1990, 1991b, 1991c, 1992; Prideaux & Stanford 1990; Prideaux & Hogan 1993; Abraham 1990, 1991, 1993, 1994a, 1994b, 1994c). Such studies present substantial evidence that discourse processing is, to some significant degree, a strategic process.

Research in the given/new phenomenon, for instance, suggests that language users manage given and new information in a strategic way (see for instance, Clark & Clark 1977; Prideaux 1990, 1991b, 1992; Abraham 1991). This given/new strategy, in effect, constrains the distribution of information such that given information is separated systematically from new information. Systematic coding is

typically by position (given>new), but other coding devices are also common. For instance, there is evidence suggesting that given/new coding also involves the selection of particular structural units: Abraham (1991) shows that new information tends to be coded in *because*-initial dependent clauses, which permit information unknown to the hearer to be elaborated with the necessary detail, whereas old information is coded in the *because of* phrasal counterpart, which permits information already known to the hearer to be condensed within a nominalization.

The given/new strategy appears to arise from cognitive limitations. Working memory has a limited capacity. Access of LTM (long term memory) tends to occur with varying degrees of efficiency. Attentional resources are highly limited. Discourse processing must occur on-line within temporal limits. The given/new strategy functions to facilitate processing in spite of these limitations. The distinctive given/new coding provides the hearer with cues as to which information to activate in LTM. And the distinctive given>new positioning allows the hearer to access given information before receiving new information. This reduces the strain on limited capacity working memory and improves the efficiency of LTM access. As well, it is likely that the coding devices increase predictability, thereby reducing the drain on attentional resources.

Such discourse investigations suggest, then, that it is the *strategic management of discourse information* which results in discourse phenomena such as given/new and discourse prominence. Given these findings, it seems reasonable to conclude that prominence like all discourse phenomena, is neither accidental nor incidental. Rather, discourse prominence is the result of a *prominence strategy* that has a specific discourse function.

3.3.3 The prominence strategy

Given the potential comprehension effects of rhetorical device type structures, it seems highly plausible that such structures may in some way be involved in the coding of importance. It becomes crystal clear that this is particularly significant for discourse processing theory when we recognize that *in discourse, there are a great many consistently occurring linguistic structures that are similar to those produced by rhetorical devices.* These marked structures are usually, and unsatisfactorily, dismissed as stylistic choices. However, given their potential comprehension effects, it seems probable that these marked structures might very well play a definite and important role in discourse processing. Indeed, it seems very probable that prominence coding during production incorporates at least some of these linguistic variations -- i.e., these marked linguistic structures are part of a prominence strategy.

In both the production and comprehension phases of discourse processing, the language user must contend with cognitive limitations. As indicated above, there is evidence from cognitive discourse research that because of such limitations, communicators manage information according to specific strategies which, in effect, constrain the way information is distributed in discourse. Prideaux (1990), for instance, proposes that a range of discourse phenomena are related to the operation of a range of corresponding constraints and strategies: given/new, markedness, iconicity, and closure -- all of which are based in such cognitive limitations as limited

capacity working memory (see also Prideaux 1991a, 1991b, 1991c, 1992; Prideaux & Hogan 1993).

Similarly, the prominence strategy also arises out of processing limitations such as those related to memory and attention. The operation of the prominence strategy (as it assigns prominence status and codes important information within highly salient marked linguistic structures) also constrains the distribution of information distribution within discourse, thus resulting in the prominence phenomenon (wherein linguistic units differ in perceptual salience to the communicator). As a general discourse processing strategy, then, the prominence strategy might have the following representation:

> ***The Prominence Strategy***
> Marked forms code information that is especially important or significant to the discourse meaning.

This strategy operates during both production and comprehension, so it may also be represented in terms that more closely reflect these processes.

During production, the speaker's ultimate goal is, of course, to clearly convey his/her intended meaning to the hearer. It is likely that information that is most vital to conveying that meaning would also be most salient to the speaker. Further, it is probable that this crucial information would be coded accordingly -- as highly prominent in some principled way. To code this crucial information, the speaker selects marked structures (similar to those described by rhetorical devices). In production, then, the speaker employs the prominence strategy to code important information towards facilitating the conveying of intended meaning. As such, the strategy would have the following representation:

> ***The Prominence Strategy*** **-- PRODUCTION**
> Increase the saliency of important/significant information by coding it in marked forms.

During comprehension, such prominence coding allows the hearer to direct attention to information vital to the discourse, and so, serves as a guide for determining intended meaning. This may be considered more explicitly within a view of processing in which the hearer does not wait to the end of the discourse to begin interpreting or deriving discourse meaning, but rather, begins interpretation on-line as the discourse evolves, and then completes the process along with any necessary revisions at its end. The latter process (the final determination of importance) is clearer if viewed in terms of the model suggested by van Dijk and Kintsch (1983; Kintsch 1988), which Wingfield (1993:230-31) summarizes thusly:

> This model proposes that in active speech perception (or in reading) linguistic input is processed in cycles on a segment-by-segment basis. As the phonological (or orthographic) stream arrives, it is rapidly recoded into propositions (or "idea units") consisting of a relational

term (the predicate) plus a set of concepts to be related (arguments). At the next stage, the connections among propositions are established, with this relationship among the propositions represented by a network referred to as a coherence graph. At this level, the most important propositions to the message structure are selected, and then other propositions connected to them are selected on the basis of shared arguments.

Viewed in terms of this processing model (or one like it[1]), the prominence strategy would, then, cue the hearer about importance/significance at both these levels of processing.

The comprehension process implementing the prominence strategy might proceed something like this: While the discourse is underway, the hearer builds a mental model of it. Propositions that are highly important/significant to the discourse meaning -- i.e., information that is coded in marked structures -- are represented within this model in some special way, perhaps with higher activation. During on-line processing, then, prominence coding and the resulting higher activation cues the hearer as to which information should be used in the local or micro-level interpretation of the discourse. At the end of the discourse, propositions representing important information -- i.e., those in a greater state of activation -- are used to derive the meaning intended by the discourse, i.e., in the macro-level interpretation of the discourse. Essentially, it is in this last stage that the final representation is constructed -- this is the gist of the message that is stored in LTM. For comprehension, then, the representation of the prominence strategy would reflect these processes:

> ***The Prominence Strategy*** -- **COMPREHENSION**
> Expect information encoded in marked forms to be especially important/significant in deriving the meaning of the discourse both at the micro level and at the macro level of the discourse.

An example will serve to clarify the function of the prominence strategy. Consider the following brief discourse passage.

> [1]What the study showed was that more burglaries occur on weekends during the summer than at any other time. [2]Not only do most people take their vacations during the summer, but lots of people go away on the weekends. [3]Like the Warners. [4]Most weekends John and Mary go to their cabin at the lake. [5]But last weekend they decided to stay home. [6]Sportcity was having that big sale and Mary wanted to get some new water-skiing gear. [7]The forecast was for rain all weekend anyway. [8]The sale was one of those midnight madness things, so it was really late when they got home, and it was raining the way it can only on summer weekends. [9]They were juggling umbrellas and packages and about to

open the back door when a burglar threw it open and knocked them down. [10]Well, they left everything lying in the mud and went chasing after him. [11]He headed straight in the direction of the ravine. [12]I'm sure he thought he could lose them in the trees. [13]He almost did, but they managed to corner him when he tripped over a log. [14]Of course, if they had gone away for the weekend, their story would have had a different ending, wouldn't it? [15]They would just join the long ranks of people who are burglarized on weekends during the summer.

The above passage includes marked forms of the sort that are described by several rhetorical devices. *Hyperbaton* describes the wh-cleft in 1, while *parisosis* describes the balanced structure in 2, and *simile,* the example that begins at 3. *Apocrisis* (a rhetorical question) occurs in 14. *Epimone* describes the repetition of weekends (1,2,4,5,7,14,15) and summer (1,2,8,15), and *polyptoton* describes the repetition of burglar/ies/ized (1,9,15).

During on-line processing, the information in such marked forms is used by the hearer as a cue to which information is important for local interpretation of the discourse, and therefore, affects the representation in working memory. Although this model will include many things, the information that is prominence-coded in marked forms is most activated. This highly activated information will be used in the final interpretation of the discourse, and so, it will affect what will be stored in the LTM. So then, at the second level of analysis, in which the most important propositions are selected, the information that is selected for the final discourse representation is the information that is prominence-coded in marked forms.

In sum, the prominence phenomenon in discourse is the consequence of a cognitively based information management strategy that operates both in comprehension and in production. This prominence strategy incorporates marked linguistic structures similar in type to those described by classical rhetorical devices. These marked structures are highly salient in nature, and they have the potential for a variety of comprehension effects: deviancy/markedness, primacy, recency, frequency, iconicity, and chunking. The prominence strategy functions to facilitate processing in both its comprehension and production phases by providing a principled means of conveying important information.

Essentially, then, this is the theoretical conception of the prominence strategy[2] that is the central focus of this research. Thus far the objective has been to characterize the prominence strategy in theoretical terms towards motivating it as an empirical hypothesis. The balance of this investigation is devoted to examining this strategy empirically in comprehension and production studies.

Notes:

[1] It should be noted that this theoretical depiction of the prominence strategy is not specifically adhered to the Kintsch and van Dijk model or to any other particular model of discourse comprehension. Their model is included in the discussion simply

for the sake of expediency, since it provides a clearer way of observing how the prominence strategy might operate during comprehension than would be possible if it were discussed only in general terms.

[2] The above characterization of the prominence strategy reveals its cognitive basis. However, it must be recognized that although prominence coding is clearly based in cognitive processing, it is also influenced strongly by a pragmatic concern for effective communication. Given the speaker's objective of effectively conveying intended meaning, the coding of important information as prominent is a highly expedient way to achieve this objective. Similarly, for the hearer, whose objective is distinguishing intended meaning from other meaning, the prominence strategy is an effective and efficient way to identity important information. The prominence strategy, then, functions to make processing easier in a way that also increases communicative effectiveness; it seems, therefore, to be based simultaneously in pragmatic expedience, i.e., it is functionally as well as cognitively based.

Chapter 4

Preliminaries to the empirical research

4.1 Introduction

As the discussion above suggests, it is quite clear that the prominence phenomenon plays a rather more significant role in discourse processing than past research in the area indicates. Further, it is also clear that discourse prominence does not exist in a void, and that it has no meaning and no function other than that given to it by the communicator. Consequently, understanding the function of prominence is only possible through a cognitive approach that implements empirical investigation. Towards this end, and as the central objective of this research, the prominence strategy was investigated in three studies that focused on the role of marked linguistic structures in both comprehension and production. However, before proceeding with a discussion of this aspect of the research, it is necessary to discuss first, the issue of markedness and second, the specific marked linguistic structures that were used in the empirical studies.

4.2 Markedness

The notion that linguistic structures can be assigned values of marked and unmarked (see also 3.2.2) is important to this study. The rhetorical device type structures that function in the prominence strategy tend to be marked linguistic structures, and in the following empirical research, it is these marked structures that become of focus of the inquiry. The production studies involve analysis of the sample data for specific types of marked structures (these will be described in 4.2). The comprehension study involves the testing of recall of stimulus passages containing these same types of marked structures. This following discussion is devoted to clearly specifying markedness, and the related notion of basic structure, as it is being used in these studies.

Essentially, markedness refers to a specific relationship between linguistic oppositions, wherein one member of the pair is assigned the value of *unmarked*, based on its tendency to be more basic or prototypical, less complex in form, more frequent in occurrence, less cognitively complex, and acquired earlier by children -- as compared to the *marked* form, which is less basic or prototypical, more structurally complex, less frequent, more cognitively complex, and later acquired by children (see for instance, Itagaki 1994; Prideaux & Yoshida 1994; Kawashima 1994; Battistella 1990; Andersen 1989; Couper-Kuhlen 1989; Harris 1989; Gundel, Houlihan, & Saunders 1988; Fox 1987).

4.2.1 Order in simple declarative sentences

The task of specifying unmarked values for English word order was initially quite straightforward. The order of noun, verb, and object in simple, declarative sentences is not highly flexible in English, since word order is important for semantic/syntactic role assignment. Unmarked or basic word order in declaratives can be specified as SV[O] (Hawkins 1983; cf. Greenberg 1966; cf. the notion of basic word order in Transformational Grammar). Basic order in a simple, declarative sentence or a main clause can be specified as:

Subject > Verb > Object or *NP > VP*	*unmarked*
Object > Verb > Subject	*marked*

for instance,

1. [Calvin]$_S$ [hates]$_V$ [spinach].$_O$	*unmarked*
[Spinach]$_O$ [Calvin]$_S$ [hates].$_V$	*marked*
It is spinach that Calvin hates.	*marked*
Spinach is what Calvin hates.	*marked*

4.2.2 The position of adjectivals

For adjectivals within noun phrases, basic order can be specified as:

[*Adjective* > Noun]$_{NP}$ > VP	*unmarked*
[Noun > *Adjective*]$_{NP}$ > VP	*marked*
[Noun]$_{NP}$ > VP > *Adjective*	*marked*

for instance,

2. [The [angry and vengeful]$_{ADJ}$ boy]]$_{NP}$ waited.	*unmarked*
[[Angry and vengeful]$_{ADJ}$ the boy]]$_{NP}$ waited.	*marked*
[The boy]$_{NP}$ waited [angry and vengeful].$_{ADJ}$	*marked*

Some exceptions are possible, especially with adjectival phrases; these are well documented in Quirk, Greenbaum, Leech, and Svartvik 1972 (see also Quirk, Greenbaum, Leech, Svartvik, 1973) and will not be listed here.

4.2.3 The position of adverbials

The basic position of adverbial constituents was much more difficult to determine. Not all adverbials typically occur in the verb phrase, but rather, depending on semantic factors and syntactic function, may be said to occur typically in other positions (see for instance, Quirk et al. 1972; 1973). In the case of adverbials, then, it is necessary to specify basic position according to particular types and to note individual exceptions within the type.

Basically, the following orders can be expected. Conjunctives (e.g., furthermore, nevertheless, in spite of), style/attitudinal disjuncts (e.g., frankly speaking, hypothetically, ideally), and viewpoint adjuncts (e.g., visually speaking, from a moral point of view) tend to occur initially but there are some exceptions

(e.g., perhaps, probably). Focusing adjuncts (e.g., exactly, just) precede or follow the modified constituent. In many cases this position is fixed, and no marked variants can occur, but in a few cases, variation is possible. Process and place adjuncts (e.g., with a bullet, by air mail, downhill) tend to occur finally. Subject and amplifying adjuncts (e.g., kindly, enormously, quite) occur medially or finally, depending on the adjunct. Time adjuncts occur in initial, medial, or final position.

Time and space adverbials pose a particular problem in terms of specifying basic position and so also, in terms of analysis. These adverbials tend to occur with great frequency in a variety of positions throughout the sentence. Many such occurrences are very likely related to prominence coding. However, research in the area indicates that there are many other factors that can be responsible for their fronting (see for instance, Hasselgard 1993). Analysis for these factors is not practical for the large data samples being examined in this study. Consequently, time and space adverbials were not included in the analysis.

For the purpose of this study, adverbial positional tendencies were based on Quirk et al. 1972, 8.78, 8.88, 8.89 (see also 1973). Because of the size of the adverbial inventory and its numerous idiosyncrasies, the list will not be repeated here in detail. Essentially then, for adverbials basic order can be summarized as:

> *adverbial order as specified by Quirk et al. 1972* (8.78, 8.88, 8.89); cf. Quirk et al. 1973 [excluding time and space adverbials]

An example of an unmarked/marked opposition for adverbials -- specifically for viewpoint adjuncts -- would be:

Adverbial > S > V > [O]	*unmarked*
S > V > [O] > *Adverbial*	*marked*
S > V > *Adverbial* > [O]	*marked*

for instance:

3. [Linguistically speaking]$_{ADV}$ [they are closer to the mainland].$_{SV[O]}$ *unmarked*

They are closer [linguistically speaking]$_{ADV}$ to the mainland.	*marked*
They are [linguistically speaking]$_{ADV}$ closer to the mainland.	*marked*
They are closer to the mainland [linguistically speaking].$_{ADV}$	*marked*

As a final note regarding adverbials, although adverbials as a lexical class tend to have considerable freedom in English, for individual adverbials, there are not always positional alternatives, and if such alternatives do exist, they might not be possible in a given context. This was also taken into consideration during analysis (see *the markedness criterion* below).

4.2.4 The order of clauses

Specifying basic order for clauses is also far from straight forward. In general, basic order for clauses within sentences can be expected to be main clause >

subordinate clause. However, a scrutiny of discourse passages reveals that conditionals, temporals, and locatives occur with great frequency in initial position (see also Quirk et al. 1972; 1973). In fact, some studies have found conditionals, for example, to occur more frequently in initial position than final (Ford & Thompson 1986; Ford 1993). Nevertheless, it is questionable whether frequency of position alone is enough to assign a sc > mc order for such clauses. Indeed research has demonstrated that in the case of temporals and locatives (both clauses and phrases), position actually depends on several different interacting contextual factors -- for instance, maintaining given>new order, maintaining order of events (event 1 > event 2), sentence complexity (e.g., avoiding end weight), and topic management (for discussions of this issue, see Hasselgard 1993, Virtanen 1992, Quirk et al. 1972 & 1973).

The complexity of issues surrounding the positional tendencies of time, space, and conditional/concession clauses makes their inclusion in this study problematic. Some frontings of these clauses are undoubtedly for the purpose of increasing prominence; however, a variety of interacting factors could also be responsible for the fronting. Although teasing apart the factors should be possible in a detailed analysis, this could not be practically undertaken for a data sample as large as the sample in this study. Consequently, it was decided to exclude these adverbials from the analysis. A summary statement for clausal position (allowing for exceptions as specified in 11.20 in Quirk et al. 1972; 1973), then, would be:

main clause > *subordinate clause* [excluding conditional/concessional, time, and space clauses]

for instance:

4. [He has spent most of his life in Egypt]$_{MC}$ [because he has always been obsessed with finding Nefertiti's tomb].$_{SC}$ *unmarked*
   [Because he has always been obsessed with finding Nefertiti's tomb]$_{SC}$ [he has spent most of his life in Egypt].$_{MC}$ *marked*

4.2.5 Conjoining within a series

When constituents occur within a series, they are typically linked with a conjunction that occurs before the final constituent. Marked conjoining would occur when that conjunction is omitted or when additional conjunctions are inserted between the constituents. For instance (where X = constituent):

X, X, X, ... *conjunction* X	*unmarked*
X, X, X, ... X	*marked*
X *conjunction* X *conjunction* X	*marked*

for instance:

5. Buy paper, pencils, paints, and brushes.	*unmarked*
Buy paper, pencils, paints, brushes.	*marked*
Buy paper and pencils and paints and brushes.	*marked*

4.2.6 The discourse function of interrogatives

Thus far the discussion has focused on establishing marked/unmarked at basically the syntactic level. Markedness can also apply at the discourse level, and this is relevant for the prominence strategy. The basic unmarked function of an interrogative is to elicit meaning. An interrogative that functions otherwise, such that no answer is either expected or required, has a marked function:

Q function: elicit information	*unmarked*
Q function: chide/scold hearer	*marked*
Q function: engage the hearer	*marked*
Q function: assert or deny something	*marked*

for instance:

6. Why did Calvin skip Miss Wormwood's math class?	*unmarked*
Is that a reason to skip math class?	*marked*
What kind of reason is that to skip math class?	*marked*
Wouldn't you have skipped her math class too?	*marked*
Is math class any way to spend a sunny afternoon?	*marked*

4.2.7 The interruption of syntactic and semantic flow

Continuing at the discourse level, it is also expected that juxtaposed or consecutive constituents will be related syntactically and semantically. Markedness occurs when a semantically and/or syntactically unrelated constituent occurs within a clause or between clauses, for instance:

7. If you see molds beginning to form, you should spray the rosebush with a mixture of water, elemental sulfur, and baking soda. *unmarked*
   If you see molds beginning to form (see the yellow leaves down here?) you should spray the rosebush with a mixture of water, elemental sulfur, and baking soda. [spoken: *Your Organic Garden, PBS*] [1] *marked*

4.2.8 Balanced or parallel structures

Consecutive constituents do not typically have identical or similar structures. Instances where such structures are repeated for consecutive constituents can be considered marked, for instance:

8a. It's our job to see that they [children] enjoy learning. We should expose them to other children. Their lives also must be patterned in a structured fashion. *unmarked*
   It's our job to see that they enjoy learning, to expose them to other children, and to pattern their lives in a structured fashion. [written: a letter to the editor. (wr1:1;2,p1)] [1] *marked*

8b. There is nothing that we can say except that it isn't so. No, we can't prove it. *unmarked*
There is nothing that I can say, other than to say it isn't so. There is nothing the Under Secretary of State can say, other than that it isn't so. There is nothing Governor Harriman can say than it isn't so. There is nothing the Prime Minister of England can say . . . except that it isn't so. No, we can't prove it. [from a J.F. Kennedy press conference. (sp16;9,p7)] *marked*

4.2.9 The repetition of constituents

Repetition is a thorny issue. It occurs extremely frequently in discourse. However, it is questionable whether all repetition arises from prominence coding. Much (and perhaps most) of it seems to arise out of coherence coding, for instance, the repetition of *Cassidy* in the following segment:

9. They said that Butch Cassidy did not die in Bolivia, but that he escaped and came back to live in Spokane. He assumed the identity of a business man named William Phillips. So they think that this Phillips guy is really Butch Cassidy. You know, they had a lot of evidence to show that he was Cassidy, but I'm not so sure he was. [written: a subject in the production experiment. (wr5:6;3)]

While repetition for these two types of coding seems similar, the two types can be distinguished. In the case of coherence coding, a considerable amount of psycholinguistic research has been done to show that anaphoric reference forms a very intricate system in which such factors as referential distance and ambiguity determine whether a constituent is repeated or replaced by a pro-form (for a review of such studies, see for instance, Garnham 1985). Deviating from the system results in problems for anaphor resolution. Therefore, since markedness requires *optionality* -- i.e., an opposition between at least two forms must exist -- it seems evident that coherence coding does not involve repetition that can be discussed in terms of markedness.

Conversely, in the case of prominence coding, repetition does seem to be a matter of optionality. For the purpose of this study, repetition that results in marked usage is specified in very narrow terms. First, in the case of local (micro-level) repetition, the reoccurrence of a key constituent must be optional, i.e., it could be omitted or replaced with a pro-form or a synonym without creating ambiguity or changing meaning. In the case of global (macro-level) repetition, in addition to being optional in this way, the repetition of a key constituent must also reoccur throughout a discourse, or within a major portion of it, sufficiently frequently to keep it in a state of high activation during comprehension. As an example, consider the following segments from a letter to the editor, which is about teenage pregnancy. The writer is questioning a journalist's claim that teenage pregnancy, as described in a recent article, could be "*the best thing that ever happened*":

10. The "Andrea" poster child you use who says it's the "*best thing that ever happened*" is living a delusion of grandeur . . . [written: a letter to the editor. (wr5:3;3,rg1)]

An instance of global repetition occurs when, throughout this short discourse the same phrase or a variation of it ("*the best thing*", "*the best that could happen*") is repeated five times -- in each case, it could have been omitted or replaced. The repetition of this key constituent constitutes a marked usage -- repetition at the global level.

An example of local repetition occurs in the same passage. In the following segment, *no* is a repeated constituent that could be omitted after its first occurrence:

11. A life wrought with making it through every moment depending on someone else's pity and hand-outs, shopping at Good Will, constant public transit, *no* holidays, *no* new clothing, *no* new anything extra. [written: a letter to the editor. (wr5:3;4,rl2)]

The repetition of this key constituent constitutes a marked usage -- repetition at the local level.

4.2.10 Discourse context and the *markedness criterion*

The above specifications characterize markedness as it was used for the following empirical studies. However, as is evident in the above discussion, it must be recognized that markedness as it occurs in discourse is not definable in simple structural terms. Both syntactic and semantic considerations must be taken into account during data analysis. So although the above characterization describes quite well what can be expected in English discourse, it is necessary to allow for the potential effects of context. Thus, the assessment of a construction for markedness is based on a specific criterion:

Markedness criterion

> For any usage or construction, to be considered *marked*, an alternative *unmarked* construction must be semantically and syntactically feasible within the particular context in which it occurs. If no unmarked counterpart is feasible, the usage or construction is not considered marked, even though it may deviate from what is expected in the terms specified (above).

4.3 The selection of rhetorical device type structures for this investigation

In the following empirical studies the focus is on how nine types of marked linguistic structures function within the prominence strategy. The selection of these types was made according to specific criteria. First, each type selected had to occur commonly in discourse. Second, each type had to exhibit the potential for a cognitive basis in comprehension effects. Third, the number of types selected was determined by feasibility for inclusion within the confines of this investigation. In the

case of the comprehension study, only a limited number of types could be included in the stimulus passages. In the case of the production studies, the kind of detailed analysis required and the large data sample being investigated restricted the number of types that could be examined.

4.3.1 Typologizing rhetorical structures

The initial step in the selection process was the construction of a functional typology of rhetorical devices. One hundred fifty rhetorical devices were gathered from a variety of sources: Corbett 1990, Horner 1988, Lanham 1968, Taylor 1972, the *Rhetorica Ad Herenium*, Aristotle's *The Art of Rhetoric*, Aristotle's *Anaximenes, Rhetorica ad Alexandrum*, Aristotle's *Rhetoric and Poetics*, Longinus' *On the Sublime*, and Quintilian's *Institutio Oratoria*. These devices were analyzed and sorted into specific *types of marked linguistic structures*, based on how they function in discourse (e.g., constituent shift, information elaboration, implication, etc.). A subset of these types was then selected on the basis on the above criteria. An analysis of production data using these types was then undertaken (the procedure for production analysis will be described in Chapter 5), for the purpose of assessing the feasibility of using the types. Given the size of the data samples, and the nature of the analysis required for each type, it was quickly found that the number of types was far too high for practical purposes, so a smaller subset was abstracted. This group was also found to be too large, so an even smaller subset was taken When implementation in analysis demonstrated that this was a tractable group, these types became the *basis* for the linguistic structures examined in this investigation.

It should be stressed that *the actual types of marked linguistic structures that were used in this investigation were not the rhetorical devices themselves.* As stated above in 1.2, **the domain of this investigation is, essentially, linguistics -- not rhetoric**. Indeed, classical rhetoric was examined only for the implications and the motivations that it could suggest for the present research. Furthermore, the focus of this study is *not* the role of classical rhetorical devices in the prominence strategy. Classical rhetorical devices simply suggest a basis for selecting the types of marked linguistic structures that are the actual focus of this research. Again, **the objective of this research is to investigate the prominence coding function of the marked linguistic structures that commonly occur in discourse; the goal is *not* to investigate the role of rhetorical devices in discourse**.

It should be also be stressed that the term *linguistic structures of the rhetorical device type* (or alternately, *rhetorical device type structures,* or *RD type structures*) does not refer to specific rhetorical devices -- rather, these terms refer to *marked linguistic structures that commonly occur in discourse* (and which are similar in form to some rhetorical devices). The selection process described above initially looked at rhetorical devices for the explicit purpose of creating functional types that would be suggestive of marked linguistic structures that might be feasibly employed by communicators within the prominence strategy. *It is this specific group of types that is the focus of this research.* These nine types of marked linguistic structures, and their definitions for the purpose of this investigation, are provided below.

4.3.2 Types of marked linguistic structures

4.3.2.1 Constituent shift

Constituent shift refers to the movement of a constituent out of basic word order (as defined in 4.1). Constituent shift has the potential for three types of comprehension effects. A markedness/deviancy effect occurs because the structure deviates from basic word order. A primacy effect is possible when a constituent is fronted, and a recency effect, when it is shifted to the end of the sentence.

12. The *weary and hungry* children arrived home. *unmarked*
    Weary and hungry, the children arrived home. *markedness/primacy*
    The children, *weary and hungry*, arrived home. *markedness*
    The children arrived home, *weary and hungry*. *markedness/recency*

Constituent shift is based on the devices *hyperbaton* and *anastrophe* (see also the discussion and defination of *hyperbaton* in 3.2.2).

4.3.2.2 Parallelism

Parallelism refers to the juxtaposing or conjoining of constituents that have identical or similar structure. This type also has the potential for three effects: a chunking effect (information is pre-packaged into chunks), a markedness effect, and in certain cases, a frequency effect, for instance:

13a. The report recommends that phonics be started in kindergarten, that parents be able to enroll children in the school of their choice, and that teachers be trained in phonics. [written: a news article in the *Edmonton Journal*, 07.93] *chunking/markedness*

13b. He's been talking to reporters. He's been talking to senators. He's been talking to people on the street. [spoken: *Washington Week in Review*. (sp3;4,a5)] *chunking/markedness/frequency*

Parallelism is based on the devices: *membrum, isocolon, parison, parisosis, antithesis* (see also 3.2.2).

4.3.2.3 Parenthesis

Parenthesis refers to the insertion between constituents of an unrelated semantic constituent, or the insertion within a constituent (e.g., a sentence) of a constituent that is not semantically or syntactically related. This type has the potential for a markedness/deviancy effect -- the resulting sentence structure or discourse structure deviates in an unexpected way, for instance:

14a. In 1934 Phillips met Mary and her granddaughter [she was on the show, eh?] up in the mountains of Wyoming. [written: a subject in the production experiment. (wr3:5;3,p1)] *markedness*

14b. They did a photo comparison of Butch and Phillips. [I'll tell you what I think about that later.] And they said it wasn't the same

person there. [spoken: a subject in the production experiment. (sp5:8;4,p2)] *markedness*

Parenthesis is based on the devices: ***parathesis, interpositio, interjectio, paremptosis, intecusio*** (see also 3.2.2).

4.3.2.4 Order of events

Order of events refers to the conveying of events as they actually occurred: *event 1 > event 2*. This type has the potential for an iconicity effect. There may also be a markedness effect on the discourse level -- if it is true that the unmarked relaying of events during a discourse is not E1>E2 -- at least in some genres; however, this would have to be established by empirical research and is beyond the bounds of this study. An example of order of events:

15. [This program, we set up]$_{E1}$ [Then General Clay and his group . . . looked at it]$_{E2}$ [They made some proposals . . . .]$_{E3}$ [spoken: J.F. Kennedy press conference. (sp3;4,o1)] *iconicity/[markedness?]*

Order of events may occur on the *local* level as above, or on the *global* level of the discourse. It is based on the device ***ordo naturalis***.

4.3.2.5 Iconic sound

Iconic sound refers to the use of a constituent for which the sound resembles its meaning. This type is also basic on iconicity, and perhaps markedness -- for most constituents, sound is not iconic to meaning. For instance:

16a. Then I turned on the igniter and *whoosh,* the engine fired up. [written: *Yeager, an Autobiography*] *iconicity/markedness*

16b. Wheels up, we hit the ground *slithering* along and went through the chicken house in a *clatter* of boards and a cloud of feathers. [written: *Yeager, an Autobiography*] *iconicity/markedness*

Iconic sound is based on the device ***onomatopoeia***.

4.3.2.6 *R-question*

R-question refers to a question that does not function as questions typically do to elicit information; in fact, no answer is required or expected. R-questions have a set of marked discourse functions: to assert/deny something, engage the hearer, scold the hearer, etc. This type, then, has the potential for a markedness effect, for instance:

17a. Isn't it time that those who play should pay the consequences? [written: a letter to the editor. (wr8:5;2,r2)] *markedness*

17b. What are you prepared to sacrifice? Why are there so many people with your attitude working for the government? [written: a letter to the editor. (wr10:6;4,r2)] *markedness*

R-question is based on the devices: *erotema, erotesis, anacoenosis, epiplexis, apocrisis, hypophora*, and *percontatio* (see also 3.2.2).

4.3.2.7 Conjunction-insertion

Conjunction-insertion refers to a conjoining of closely related ideas in which a conjunction occurs between all the constituents in the sequence. This type has the potential for a markedness effect (conjunctions are not typically repeated in a series). There may also be a frequency effect resulting from the repetition of the conjunction. As well, in some cases, parallelism co-occurs, resulting in a possible iconicity effect, for instance:

18a. He was -- and he is -- a distinguished public servant, *and* he has a fine war record, *and* he was a Ph.D. of the University of Wisconsin, *and* he is in charge of taxation, *and* he was highly recommended . . . . [spoken: J.F. Kennedy press conference. (sp8;1,p3)] *markedness/frequency/iconicity*

18b. I mean it's hard to imagine the British prime minister, or the chancellor of Germany, or even the new prime minister of Canada having to bargain with-- with every single back-bencher. [spoken: *Washington Week in Review*. (sp2;2,p1)] *markedness/frequency*

Conjunction-insertion is based on the device *polysyndeton* (see also 3.2.2).

4.3.2.8 Conjunction-deletion

Conjunction-deletion refers to a conjoining of closely related ideas in which no conjunctions occur. This type is based on markedness (a conjunction typically occurs before the last constituent in a series), for instance:

19a. The peaceful coexistence which is frequently talked about will be very intense in Asia, Africa, the Middle East, __ Latin America. [spoken: J.F. Kennedy press conference. (sp1;3,a1)] *markedness*

19b. This is a matter which affects employment, jobs, our economic prospects, __ the struggle against a recession. [spoken: J.F. Kennedy press conference. (sp17;2,a7)] *markedness*

Conjunction-deletion is based on the device *asyndeton* (see also 3.2.2).

4.3.2.9 Repetition

Repetition refers to the recurrence of a highly key or memory-worthy constituent either *locally* or *globally*. Adhering to the markedness criteria specified above (4.1), to qualify as an instance of local repetition, the reoccurrence of a key

constituent must be optional, i.e., it could be omitted or replaced with a pro-form or a synonym without creating ambiguity. To qualify as global repetition, the repetition of a key constituent also must be optional and as well, must reoccur throughout a discourse or within a major part. For a detailed example of repetition, see 4.1.9 above. Repetition is based on the devices *anadiplosis, anaphora, antistrophe, epiphora, epistrophe, epanalepsis, antimetabole, chiasmus, epimone, tautotes,* and *ploce.*

4.4 Summary

The objective of this chapter has been to specify in detail the kinds of structures which constitute the focus of this study. In the chapters that follow, the RD types described above are investigated in three empirical studies. As mentioned above, these RD types are based on classical rhetorical devices, but they are not the devices themselves. Rather, these nine RD types under investigation here refer to marked linguistic structures which commonly occur in discourse.

Notes:

[1] The descriptive information provided in square brackets after each example provides two possible types of information about the source from which it was taken. First, the genre type (spoken or written) and the specific source, e.g., [spoken: *Your Organic Garden, PBS*]. Second, if an example is also taken from data used in the production studies for this research, there is a brief shorthand notation that describes the location of the example in the data source, e.g., [spoken: *Washington Week in Review.* (sp3;4,a5)].

Chapter 5

The production experiment

5.1 Introduction

5.1.1 The production studies

As demonstrated above in Chapter 2, the prominence phenomenon is not well understood. This is indicated in several ways. For instance, previous research within discourse/event grounding, the prevalent linguistic approach, accounts *only* for the prominence associated with temporally sequenced events -- but of course, it is very likely that communicators might code information other than events as prominent. In addition to this, the coding devices proposed in previous research account *only* for part of what communicators consider prominent -- as cognitive grounding studies have suggested, during discourse processing, communicators actually use additional or other means of coding prominence. Furthermore, prior research accounts *only* for prominence in the narrative genre -- of course, it certainly must be the case that communicators also code prominence/significance in the vast number of other possible discourse genres: conversation, news, technical/scientific, and so on.

As was also pointed out above, RD type marked linguistic structures are prime candidates for prominence coding devices for several reasons. First, because they are not restricted to any genre. Second, because they are not restricted as to the type of information that they can code as prominent. Third, because they are salient by nature and indeed, have the potential for a variety of comprehension effects. The production studies here are the first two of three studies that were undertaken to examine the role of such RD type structures in prominence coding during discourse processing. The objective of the production studies was specifically to investigate the occurrence of RD type marked linguistic structures in production data. Two types of production studies were used for this purpose: a production experiment and a production text analysis study.

5.1.2 The production experiment

As far back as the ancient Romans, some individuals have considered RD type marked linguistic structures to be ornamental -- something to add interest or variety to prose. Linguists among others, have, in fact, tended to dismiss such marked linguistic structures as stylistic choices. However, as is evident from the above discussion, such structures do appear to have a cognitive basis, and so, a potential for a variety of comprehension effects.

This suggests two possibilities for the RD type linguistic structures that are the focus of this study. One is that RD types function to create prominence in both

spoken and written discourse of any kind. The other is that RD types may function to create prominence but only for *planned* discourse; thus, since spoken discourse tends to be unplanned, it may be that they function only in written discourse genres.

Although such a finding would, in itself, be interesting, it would have little bearing on discourse processing. And it would certainly provide no support for the cognitive prominence strategy proposed here. The objective of the production experiment, then, was to examine this very question: Are marked linguistic structures of the rhetorical device type used as coding devices within the prominence strategy during cognitive processing? Or are they the consequence of deliberate conscious planning or self-editing that takes place after the fact?

To examine this question an experiment was conducted to gather production data from subjects in two *unplanned* conditions: a *written* letter, and a *spoken* letter (audio-taped onto a cassette). These data were then analyzed for the occurrence of the nine types of marked linguistic structures specified above in 4.2. The hypothesis was that all nine types of structures would be found in the unplanned production data from both conditions. It was expected that the results of the study would provide support that these marked linguistic structures naturally occur in unplanned discourse, whether spoken or written, and thus, also support their inclusion as coding devices in the prominence strategy.

5.2 Method

Twenty-four subjects (12 male, 12 female), ranging in age from eighteen to forty-nine, participated on a volunteer basis in this study. All were native speakers of English, and all were students in undergraduate and graduate programs at the University of Alberta. The subjects were randomly assigned to two conditions: unplanned oral (*condition I: spoken letter*) and unplanned written (*condition II: written letter*), and each subject was tested separately.

For both conditions, subjects were asked to watch a brief (six minute) segment taken from the television show *Unsolved Mysteries*. The segment discussed evidence for and against a theory that the famous outlaw Butch Cassidy did not meet his death in a shoot-out in Bolivia, as history claims, but rather that he returned to the United States to Spokane, Washington, where he became a prosperous businessman named William Thaddeus Phillips.

Prior to watching the segment, subjects were asked to imagine themselves in the following situation: he/she had received a message from a friend who was unable to watch the program. The message asked him/her to watch the segment and to send the friend a letter describing (1) the evidence that was presented on the program segment, and (2) what his/her opinion on the issue was. To aid in simulating the situation, each subject was given a short letter from this friend in which this request was outlined (see *Appendix 1* for the subject instructions and the letter).

Subjects watched the segment only once; however, to facilitate recall of facts, they were permitted to take brief notes while watching. After viewing the segment, each subject then relayed the information to his/her friend in a letter: a spoken letter (audio-taped onto a cassette) or a written letter. In both conditions, during the

writing/taping of the letter, subjects were permitted to consult the brief notes they had taken.

Following the transcription procedure, the data were segmented into clauses (relative, adverbial, complement, and main). The clause, which was taken as the basic unit of analysis, was defined by the presence of a modal or tensed verb. The spoken letter condition (n=1144 clauses) was found to have almost twice as many clauses as the written letter condition (n=632), due in part to a higher frequency of comment clauses such as *'you know' and 'I mean'*. The resulting data samples were then analyzed for the occurrence of the nine types of marked linguistic structures specified in 4.2. All the data from both conditions were analyzed for each type in succession, e.g., all the occurrences of constituent shift in both samples were established before proceeding onto the next type. During analysis any doubtful cases were not included as an occurrence of the type.

5.3 Results and discussion

For each type, the total frequency of occurrence was determined for each subject. Then, since the individual letters were found to differ considerably in length, a percentage based on the total number of clauses was calculated. This established the frequencies for the individual subjects. The individual frequencies were then combined to determine the overall frequencies for the occurrence of each RD type in each condition, and then a percentage of total clauses was calculated for each. A chi square test for significant difference between proportions[1] was used to assess frequency differences.

The results for the frequency analysis for the RD types are shown in *Table 1*. If RD type structures were a consequence of planning, it would be expected that they would not occur in either condition -- or if they did occur at all, that they would appear sparsely, and perhaps, only in the written letters (since they may allow for slightly more self-editing than the spoken letters, which are subject to the exigencies associated with on-line planning). The analysis revealed, however, that all nine types of marked structures occurred consistently in both the written and the spoken conditions. Moreover, the total frequencies of RD types was about the same (the difference was not statistically significant). While some types did occur more often in one genre than the other, significant differences were found for only three: constituent shift (which occurred more frequently in the spoken), and parenthesis and rhetorical question (which occurred more frequently in the written).

This suggests that subjects coded about the same number of information units with RD types (which might be expected since it was the same task) but that they varied in the specific coding devices used. Some variation, then, might be accounted for by individual subject differences. The frequencies for the individual subjects are summarized in *Table 2* and *Table 3*. If we look at the summary statistics in *Table 3* and the total number of RD types for each subject in *Table 2*, we can see that there appears to be considerable variation in subjects' use of the RD types. Subjects' total scores ranged in the spoken from 10 to 38 (S5 and S6) and in the written, from 6 to 22 (S7 and S11). However, the letters also varied in length: total clauses ranged in the spoken, from 41 to 193 (S4 and S6) and in the written, from 29 to 110 (S7 and

S11). Thus percentages provide a more accurate basis for comparison. When these same total scores are examined as percentages of the total clauses, this variation is

Table 1: Production experiment summary: Occurrence of RD type linguistic structures in the informal unplanned letter data

RD type structure	Informal unplanned letter			
	spoken		written	
	f	%	f	%
constituent shift	36	3.15	15	2.37
clefting	10		4	
other	26		11	
parallelism	49	4.28	19	3.00
parenthesis	27	2.36	32	5.06
order of events	20	1.75	23	3.64
local	18		21	
global	2		2	
iconic sound	2	0.17	3	0.47
r-question	6	0.52	10	1.58
conjunction-insertion	11	0.96	5	0.79
conjunction-deletion	3	0.26	1	0.16
repetition	58	5.07	28	4.43
local	40		13	
global	18		15	
Total	212	18.53	136	21.52

f = frequency
% = percentage of total clauses in genre
spoken letter: 1144 clauses [8685 words]
written letter: 632 clauses [5452 words]
n = 24

much less: in the spoken 19.7% to 26.80%, and in the written 20.0% to 20.7%, neither of which is a significant difference.

But these figures do not reflect the actual range. The actual range as indicated by percentage frequencies is quite different. In the spoken, the scores range from 13.2% to 26.8%, which is a significant difference (X^2 (1) = 3.84, $p<.05$), and in the written, from 15.8% to 28.1%, which is not significant. One possible explanation for the difference in the spoken condition is that some subjects were not comfortable in the spoken letter task, and that their scores reflect their discomfort. Another possibility is that some subjects used other RD types than the ones being examined in this study. During analysis it was noticed that other possible types were present in the data sample, e.g., metaphor and simile.

A close scrutiny of the subject frequencies for the individual RD types (*Table 2*) reveals that some subjects did not use some of the lower frequency RD types at all. Nevertheless, for the most part, usages of each RD type was spread out evenly across the subjects. Consequently, while individual subject differences might be a source of some variation, it seems to be a minor source. What is a more likely

Table 2: RD type frequencies for individual subjects in the production experiment

	RD types									Summary stats		
spoken	**CS**	**Parl**	**Part**	**OE**	**IS**	**RQ**	**+C**	**-C**	**Rep**	**Total t**	**Clauses**	**%**
S1	1	3	4	3	0	0	0	0	7	18	102	17.7
S2	3	1	2	2	0	0	1	0	3	12	60	20.0
S3	1	3	2	1	0	0	3	0	3	13	71	18.3
S4	2	4	1	0	0	1	0	0	3	11	41	26.8
S5	3	2	3	0	0	0	0	0	2	10	46	21.7
S6	13	7	3	3	0	0	4	1	7	38	193	19.7
S7	1	2	3	3	0	0	0	0	2	11	78	14.1
S8	0	8	1	2	0	0	0	1	4	16	73	21.9
S9	3	9	2	1	1	0	0	0	8	24	108	22.2
S10	0	4	1	2	0	0	0	0	4	11	72	15.3
S11	3	4	2	2	0	3	1	0	8	23	111	20.7
S12	6	2	3	1	1	2	2	1	7	25	189	13.2
total	36	49	37	20	2	6	11	3	58	212	1144	
written												
S1	1	2	0	2	0	0	0	0	1	6	38	15.8
S2	0	2	2	3	0	0	0	0	5	12	48	25.0
S3	4	4	4	1	1	1	1	0	2	18	64	28.1
S4	3	4	1	3	1	2	0	0	2	16	72	22.2
S5	1	1	3	0	0	2	0	0	4	11	46	23.9
S6	0	1	1	1	0	0	1	0	2	6	33	18.2
S7	0	0	1	3	0	0	1	0	1	6	29	20.7
S8	1	0	1	3	0	0	0	1	1	7	40	17.5
S9	0	3	2	0	0	0	0	0	2	7	41	17.1
S10	3	2	6	1	0	1	1	0	4	18	67	26.9
S11	2	0	9	3	1	4	1	0	2	22	110	20.0
S12	0	0	2	3	0	0	0	0	2	7	44	15.9
total	15	19	32	23	3	10	5	1	28	136	632	

CS: constituent shift — Parl: parallelism — Part: parenthesis
OE: order of events — IS: iconic sound — RQ: r-question
+C: conjunction insertion — -C: conjunction deletion — Rep: repetition
Total t: total RD types — Clauses: total clauses in letter — %: percentage of RD types by clause

Table 3: Summary statistics for subjects in the production experiment

	frequency of RD types per letter						clauses per letter					
	sum	**mean**	**s**	**range**	**min**	**max**	**sum**	**mean**	**s**	**range**	**min**	**max**
unplanned spoken (n=12)	212	17.58	8.52	28	10	38	1144	95.33	49.85	152	41	193
unplanned written (n=12)	136	11.25	5.85	16	6	22	632	51.25	22.14	81	29	110

source is the functions of the RD types themselves. As will be discussed further below, the RD types tend to have specific discourse functions; thus, whether or not a subject used any given device might well depend on the nature of the information to be coded and the discourse function that was required.

A further examination of the data in *Table 1* reveals some additional tendencies about RD type frequencies. In both conditions, the same five types were most frequently used; however, the most frequent type and the order of preference differed with the condition.

CI (spoken) repetition>parallelism>constituent shift>parenthesis>order of events
CII (written) parenthesis>repetition>order of events>parallelism>consituent-shift

An indepth scrutiny of the types and how they actually function in the data samples reveals that these differences are in some part related to modality and RD type function. However, for the most part, the types tend to function similarly for both conditions. In fact, some interesting tendencies in the functions of each of the types were visible in the data sample:

Constituent shift occurred more often in the spoken condition (it was third most frequent in the spoken, and fifth in the written). In both conditions it was used for the movement of a variety of constituents, for instance, the movement of object noun phrases to a clause initial position, creating the potential for a primacy effect :

1a. You know, like *the pistol* he could just get somehow. [CI: spoken. (sp6:10;4,h7)][2]
1b. So *this type of engraving* he would have likely done while their relationship was still budding. [CII: written. (wr11:13;6,h2)]

Clefting, as a subtype of constituent shift, was quite frequent, especially in the spoken sample. It tended to be used primarily for conveying a subject's personal evaluative views, but was also used to relate the goal of the *Unsolved Mysteries* segment (both basic objectives of the experimental task), for instance:

1c. Now what I think is that nobody knows except Butch Cassidy. [CI: spoken. (sp6:10;4,h6)]
1d. What they were trying to reveal was information about the history of Butch Cassidy and the Sundance Kid. [CII: written. (wr11:13;2,h1)]

Parallelism was also frequent in both conditions, though slightly more so in the spoken (it was second in the spoken, fourth in the written). It tended to be used widely throughout the passages for introducing evidence presented on the program; information thus presented then became the basis for an elaboration of some type, for instance:

2a. Phillips wrote a book with uh-- specific details of Butch Cassidy's life that no one else knew, which suggested that uh-- either *that he knew Butch* or *that he was Butch himself* . . . . [CI: spoken. (sp8:14;5,p4)]
2b. They then went on to explain *how Phillips could possibly have escaped, how he could possibly not have died in Bolivia* . . . . . [CII: written. (wr4:5;2,p1)]

Parenthesis occurred most frequently in the written condition and fourth most frequently in the spoken. In the spoken, a speaker often used it to insert information that was necessary to the hearer for evaluating was the speaker was saying, for instance, in the following segment, knowing that the granddaughter of Butch Cassidy's childhood sweetheart presented the evidence in person on the program was useful in assessing the importance of the evidence:

3a. In 1934 Phillips met Mary and her granddaughter [*she was on the show, eh?*] up in the mountains of Wyoming. [CI: spoken. (sp3:5;2,p2)]

In the written condition, parenthesis was often used to insert personal comments, for instance:

3b. They did a photo comparison of Butch and Phillips. [*I'll tell you what I think about that later.*] And they said it wasn't the same person there. [CII: written. (wr3:3;6,p4)]

Order of events occurred third most frequently in the written condition and fifth most frequently in the spoken. This type functions at two levels, local and global. At the global level, communicators used it to convey the order in which the evidence was presented during the segment. At the local level it was used primarily for the same purpose in both conditions -- to relay a noteworthy sequence of historical events, for instance:

4a. Apparently this Phillips fellow turned up in Spokane in 1910. He opened a business -- it was a machine shop, I think -- and uh-- he became a suc-- successful business man. Then in 1934, he went to a-- a sort of a reunion with Butch's old friends um-- in the mountains of Wyoming. [CI: spoken. (sp8:14;5,o3)]
4b. Cassidy returned to Spokane and died of natural causes many years later. [CII: written. (wr8:10;5,o2)]

Repetition occurred most frequently in the spoken condition and second most frequently in the written. This type functions on both the local and global level. In the spoken condition, it tended to be used more frequently on the local level, whereas in the written, it was used slightly more frequently on the global level, which may be an indication that global level repetition is related to more planning. Both

types of repetition tended to be used to convey the speaker/writer's subjective evaluative opinion either directly or by implication, for instance:

5a. There wasn't actually any talk until like 1922 about this guy-- that Butch Cassidy was alive so-- That was, you know, like *14 years after he was supposed to have been dead.* So it was *14 years after he was supposed to have been dead* that people started saying well, *maybe he is alive, maybe he is alive!* Kinda maybe like Jim Morrison and Elvis. [CI: spoken. (sp12:22;5,r1)]

5b. What it really comes down to is that *no one really knows. No one will really ever know.* Maybe, *no one ever knew* -- not even Bill Phillips himself. Perhaps, after a severe head injury, he convinced himself that he was Cassidy . . . . [CII: written. (wr10:12;4,r2)]

The remaining four types occurred with considerably less frequency, but nevertheless, they all were present in both conditions. *Conjunction-insertion* and *conjunction-deletion* were both higher in frequency in the spoken than the written. The generally low frequency of these types and indeed, their comparatively lower frequency in the written condition, is perhaps, to be expected given the prescriptive injunctions against deviations of this sort. The function of both types tended to be similar for both conditions: conveying the communicator's evaluation of the evidence, either as to its strength or its paucity, for instance:

6a. But they don't ever explore why there were still two bodies there, *or* who they would have been, *or* where they would have come from *or* anything like that so-- [*conjunction-insertion*, CI: spoken. (sp12:22;2,p2)]

6b. As to the photo comparison, the thing is that basic facts about appearance can't be changed -- head size, eye size, placement, mouth shape, ___ chin shape. [*conjunction-deletion*, CII: written. (wr8:10;4,a1)]

In 6a, the effect seems to be something like -- there is *so much* they neglected to address on this issue, implying an inadequacy of the evidence. Similarly, in 6b, the effect is something like -- there is *so much* that cannot be changed, implying that the evidence is substantial. In spite of the fact that with one type, conjunctions are inserted while for the other, conjunctions are deleted, the effect of using these types (at least for this task) is similar: the implication of noteworthy *quantity*.

R-question occurred more frequently in the written condition than in the spoken. Although r-questions can function in a variety of ways, the subjects in both conditions all used the type in the same way: to engage the hearer/reader, for instance:

7a. They say that Butch Cassidy and the Sundance Kid had a friend, Percy Siebert, who worked in a tin mine with them in Bolivia. I think I remember him in the movie -- remember when they were riding along with donkeys? [CI: spoken. (sp11:20;4,r1)]

7b. So it kind of makes you wonder when the engraving was done. Was it a new polished ring, or worn from ropes and pistol handles? [CII: written. (wr11:13;5,r3)]

The final type, *iconic sound*, was used more frequently in the written condition. In both conditions it was used for adding a subjective evaluative dimension to a description, for instance:

8a. But then *zap,* suddenly this guy turns up in Spokane, and he's got like, absolutely no past. No records of any kind. [CI: spoken. (sp9:16;2,i1)]

8b. They did a photo comparison, and really, you know, Phillips did bear an *eerie* resemblance to Cassidy. [CII: written. (wr3:3;3,i1)]

Iconic sound was quite infrequent in both conditions; this, perhaps, is to be expected, given the nature of the task -- a discussion and evaluation of evidence, with little opportunity, or perhaps need, for description. Nevertheless, it did occur in both conditions.

5.4 Conclusions

The results of the production experiment, then, clearly support the hypothesis: these nine types of marked linguistic structures occur consistently in unplanned discourse, both spoken and written. This suggests, then, that these RD type structures are not simply decorative/esthetic -- rather, they originate during discourse processing. This finding, that these structures are not restricted in terms of either modality (spoken/written) or planning, provides support for their inclusion in the prominence strategy.

A second finding in this research concerns the function of the devices. There was a tendency for the devices to function in specific ways relatable to the conveying of information that could be considered prominent. For instance, clefting, repetition, conjunction-insertion, and conjunction-deletion all tended to be used for the conveying of the communicator's evaluative views. Since the task specifically requested subjects' opinions, it would be expected that this information would be found coded prominent for importance. (The issue of coding importance with these types will be explicitly explored in the comprehension study in Chapter 7.)

A third finding of this study is that these structures tend to be relatively low in frequency -- in total only 18.53% of the clauses in the spoken condition and 21.52% of the clauses in the written condition were coded with these structures. This may be the general tendency of these structures -- since these structures are marked, they would be expected to occur with low frequency. Or low frequency may be a tendency related to planning, and genres that allow for more planning may show a

higher frequency of RD type structures. These issues were further explored in the production text analysis that follows.

Notes:

[1] The chi square test for significant differences between proportions (see for instance, Ferguson 1981) requires specifying both the frequency of occurrence and the frequency of non-occurrence. In the case of RD type structures, non-occurrence is difficult and perhaps impossible to establish with any high degree of accuracy. Nevertheless, it was desirable to assess the differences between frequencies in some way. For the purpose of this study, it was decided to base frequency on the number of clauses, and to calculate *the frequency of non-occurrence as the total number of clauses minus the frequency of occurrence*. This assumes, of course, that only one RD type per clause is possible, and that every clause is a potential host for a type. This is not precisely accurate. More than one RD type per clause may occur (e.g., in the case of repetition). And not every clause is a potential host for an RD -- if RD types do code important information for prominence, then the potential number of hosts is limited to those where important information is located (for instance, this would exclude a clause such as *you know* in *'You know, I think I might disagree with what they said about the photo comparison'*). Consequently, the occurrence of RD types is not merely a matter of syntax, but a matter of syntax, semantics, and discourse. It should be noted, therefore, that while the chi square tests used in this study are a useful guideline, they are limited by their inability to assess this complex phenomenon accurately.

[2] This coding notation refers to the condition (i.e., I or II), the condition type (i.e., spoken or written) and the location in the data sample (e.g., wr11:13;6,h2). Thus, [CI: spoken. (wr11:13;6,h2)]

Chapter 6

The production text analysis

6.1 Introduction

The results of the production experiment suggest, then, that the occurrence of the nine RD type structures under investigation are not restricted either by planning or by modality; however, it leaves unaddressed whether that unrestrictedness is qualified in some way. It may be, for instance, that frequency for RD type structures increases with more planning time. It may also be that their function changes in some way. This study continues the exploration of these issues. In this study, data samples were gathered from six genres differing in degrees of plannedness. These data were then analyzed for the occurrence of the nine RD type structures.

The hypothesis under investigation was that RD type marked linguistic structures will not show a general tendency to occur with greater frequency in genres with more time available for planning and self-editing. If these RD type structures are purely the consequence of the prominence strategy during discourse processing, then it would be expected that no marked increase in frequency would be evident for more planned genres. Such a finding would provide further support for the function of these structures within the prominence strategy and thus, for their role in comprehension.

6.2 Method

For the purpose of this study, data samples were collected from six genres (three spoken, three written) which ranged in available time for planning and self-editing. Selecting and labeling genres is not a simple task. Each genre varies not on a single continuum but is, rather, the intersection of several continua. Consequently, any label is only partially descriptive. Thus, it should be noted that for the purpose of this study, the labels given to these genres are intended only to provide a way of distinguishing the genres, and are not intended to be entirely descriptive. (See *Appendix 2* for a brief excerpt that exemplifies each genre sample.)

The first of the three spoken genre samples selected for this study is a *PBS* program on sports fishing (*Fishful Thinking*). In terms of subject matter, it can be classified as sports, fishing, and hobby. Its purpose is, basically, reporting of a sort, informing in the how-to, good advice sense. It is a monologue, extremely informal, largely unplanned -- throughout the program, the host is standing in the middle of a stream, fishing for salmon, and talking alternately to the viewers and the fish. The speech is spontaneous in nature (as indicated by the frequent speech errors, grammatical errors, hesitations, false starts, etc.). This genre was labeled ***sports monologue***.

The second spoken genre sample is a *PBS* news program (*Washington Week in Review*), in which six reporters and a moderator discuss various aspects of a political issue/event. In this instance, the discussion centers on President Clinton's 1993 budget. In terms of subject, it can be classified as news and politics, and it's purpose, basically, is to report and inform. The discussion is a multilogue, fairly informal, and though somewhat planned, not heavily scripted -- judging by the frequent speech errors, hesitations, false starts, interruptions and as well, numerous instances of overlapping speech. This genre was labeled ***political discussion***.

The third spoken genre is a press conference with John F. Kennedy taken from George W. Johnson's (Ed.) *The Kennedy Presidential Press Conferences* (New York: Earl M. Coleman, 1978). In terms of subject, it can be classified as politics. It's purpose is to inform, and in a sense, report. It has many characteristics of a dialogue, since each exchange occurs between Kennedy and a reporter. It is quite formal in situation, but largely unplanned (though undoubtedly Kennedy had some idea of what he might be asked, just as the reporters and the fisherman above had some notion of what they would be discussing). Again, there are frequent false starts, hesitations, grammatical errors and the like that would indicate that the speech tends to be spontaneous and unplanned as opposed to being planned formal speech. This genre was labeled ***press conference***.

The first of the three written genre samples is a set of twenty-four randomly selected letters to the editor taken from the *Edmonton Journal*. The letters cover a range of topics from sports to politics. The purpose is to express opinion, inform, complain, chastise, etc. The situation is thus fairly formal (as opposed to an informal friendly letter), but the tone in most of the letters tends to be informal and conversational. Since it is a written genre, there is considerable opportunity for self-editing and planning; however, a number of grammatical errors were in evidence which may indicate that they were not heavily self-edited. This genre was labeled ***editorial letters***.

The second written genre sample is an article titled 'Inside Windows 4.0', taken from a computing magazine, *PC Computing (7,3)*. In terms of subject, it can be classified as technical and computing. The purpose is to report, inform, and describe (in this particular case, the innovative features of a new windows software). This is a type of reporting, but is also a type of technical/scientific writing. It is very informal in both tone and writing style (lots of idioms and sentence fragments), but since this is a professionally written magazine article, the potential for self (and other) editing is considerable. This genre was labeled ***tech/sci popular***.

The third written genre sample is a chapter from a book titled *Seasonal Affective Disorder,* written by Angela Smyth (London: Unwin, 1990). The subject is research in medicine/psychology. The purpose is to inform and discuss. The book outlines and discusses medical research using a formal tone and writing style (e.g., no incomplete sentences and almost no idiom). Since this is a chapter from a book, professionally written, the potential for self (and other) editing is very high. This genre had much in common with the computing article -- both were technical/scientific discussions, both were professionally written and highly planned,

but this genre is far more formal in both tone and writing style. This genre was labeled ***tech/sci research***.

Rating the available time for planning/self-editing is difficult. The most accurate measure would require in depth knowledge about the production of the discourse and each of the speakers and writers. However, it is possible to make a rough but reliable estimate. In the case of the spoken genres, the available planning/self-editing time would be roughly the same for the press conference and political discussion, which would allow, perhaps, for a modicum of planning time while other speakers had the floor. Planning time would be least for the sports monologue since there was no question of the speaker gaining planning time by yielding the floor to other speakers.

In the case of the written genres, the least potential for planning/self-editing seems to be with editorial letters. With tech/sci popular and tech/sci research, since they are professionally written, the potential for planning increases, as does the potential for self-editing and other-editing (from an external editor). Since tech/sci research is from a book, it would seem to offer the most potential for planning/editing.

The spoken genres as a group compared to the written genres would all have less available planning/editing time, i.e., any spoken genre would have less available planning time than any written genre. Thus, it would be possible to establish the following rating scale (from least to most available planning/editing time):

sports mono<polit disc | press conf<editorial let<tech/sci pop<tech/sci research

wherein the spoken sports monologue has the least and the tech/sci research has the most potential for planning and editing during discourse production.

The genre samples were selected randomly for the most part; however, in the case of the spoken samples, a variation in interlocutors (monologue, dialogue, multilogue) was a criterion, and for both samples, variation in potential self-editing was a criterion. For each of these genres a *complete* discourse was selected -- a complete program in the case of the sports monologue and political discussion, (two) complete press conferences, the complete magazine article for tech/sci popular, a complete chapter for tech/sci research, and the (twenty-four) complete editorial letters. Following the transcription procedure, the data were segmented into clauses (as defined by the presence of a modal or a tensed verb).

The data were then analyzed for the presence of the nine RD type structures specified in 4.2. All the data from both conditions were analyzed for each type in succession (for instance, analysis focused on determining all occurrences of constituent shift in all the genres, before it proceeded onto the next RD type). During analysis, doubtful cases were rejected as an occurrence of the type.

6.3 Results and discussion

For each type, the frequency of occurrence was determined, and then a percentage based on the total number of clauses was calculated. A chi square test

for significant difference in proportions was used for the assessment of frequency differences. The results of the frequency analysis are shown in *Table 4*.

Table 4: Production Text Analysis Summary: Occurrence of RD type structures in selected genres

	Spoken Genres						Written Genres					
RD type structures	**Sports monologue**		**Political discussion**		**Press conference**		**Editorial letters**		**Tech/Sci popular**		**Tech/Sci research**	
	f	%	f	%	f	%	f	%	f	%	f	%
constituent shift	12	3.91	13	2.17	36	4.89	16	2.54	21	5.26	11	3.53
clefting	1		1		3		2		0		1	
other	11		12		33		14		21		10	
parallelism	10	3.26	20	3.33	33	4.48	22	3.49	14	3.51	8	2.56
parenthesis	6	1.95	11	1.83	17	2.31	36	5.71	19	4.76	0	0
order of events	12	3.91	9	1.50	2	0.27	9	1.43	1	0.25	18	5.77
local	12		9		2		9		1		17	
global	0		0		0		0		0		1	
iconic sound	6	1.95	6	1.00	1	0.14	10	1.59	5	1.25	2	0.64
r-question	2	0.65	2	0.33	1	0.14	30	4.76	19	4.76	5	1.60
conj-insertion	2	0.65	2	0.33	8	1.09	2	0.32	0	0	0	0
conj-deletion	1	0.33	6	1.00	7	0.95	2	0.32	1	0.25	0	0
repetition	15	4.89	27	4.50	57	7.74	55	8.73	11	2.76	9	2.88
local	11		17		37		44		6		3	
global	4		10		20		11		5		6	
Total	66	21.5	96	16.0	162	22.0	182	28.88	91	22.8	53	17.0

f = frequency
% = percentage of total clauses in genre

spoken genres
sports monologue: 307 clauses [1769 words]
political discussion: 600 clauses [4808 words]
press conference: 736 clauses [6639 words]

written genres
editorial letters: 630 clauses [7209 words]
tech/sci popular: 399 clauses [4906 words]
tech/sci research: 312 clauses [3351 words]

As with the unplanned genres in the previous study, the frequencies for each type in all the genres tend to be quite low, but nevertheless, the types show a tendency to occur consistently. There were however, three instances where a type did not occur: parenthesis, conjunction-insertion and conjunction-deletion did not occur in the tech/sci research genre and conjunction-insertion did not occur in tech/sci popular. Since these two genres are high in potential self/other-editing, it is possible that for the latter two types, prescriptive injunctions against such "aberrations" result in their deletion during editing. An alternative explanation for these cases and also for the absence of parenthesis in these samples might be related to the function of the type, i.e., it was not used because it was not required.

If we look at the total frequencies and percentages for each genre, we can see that the editorial letter genre has by far the highest of all the genres, even higher than the two tech/sci genres which have greater potential for planning time and self/other-editing. Since this genre sample is, of course, composed of twenty-four letters, an examination of the individual letter data would be useful in determining why this is

Table 5: RD type frequencies for individual letters in editorial letter genre

	RD types									Summary stats		
Letter	**CS**	**Parl**	**Part**	**OE**	**IS**	**RQ**	**+C**	**-C**	**Rep**	**Total t**	**Clauses**	**%**
1	2	2	1	0	0	0	0	0	1	6	15	40.0
2	0	1	1	0	0	1	0	0	1	4	30	13.3
3	0	0	1	0	1	1	0	0	1	4	12	33.3
4	0	0	1	0	0	2	0	0	2	5	24	20.8
5	0	1	4	0	1	4	0	2	5	17	41	41.5
6	0	1	0	0	0	2	0	0	0	3	19	15.8
7	0	1	0	0	1	0	0	0	1	3	11	27.3
8	0	0	0	0	0	2	0	0	2	4	13	30.8
9	0	2	0	0	0	0	0	0	2	5	21	23.8
10	0	2	3	0	3	3	1	0	4	15	49	30.6
11	2	3	0	1	1	0	0	0	6	13	46	28.3
12	1	0	3	3	0	0	0	0	3	10	41	24.4
13	1	0	2	2	0	2	0	0	0	7	26	26.9
14	0	1	5	1	0	3	0	0	6	16	44	36.4
15	0	0	4	0	0	1	0	0	2	7	43	16.3
16	0	2	0	0	0	0	0	0	1	3	29	10.3
17	2	1	0	0	2	2	0	0	5	12	47	25.4
18	1	0	1	0	0	0	0	0	2	4	17	23.5
19	2	0	1	0	0	4	0	0	2	9	23	39.1
20	0	2	1	1	0	0	0	0	3	7	12	58.3
21	1	2	1	0	0	0	0	0	1	5	15	33.3
22	0	0	5	0	0	1	0	0	2	8	15	53.3
23	2	0	0	0	0	1	0	0	1	4	17	23.5
24	2	1	2	1	1	1	1	0	2	11	20	55.0
total	16	22	36	9	10	30	2	2	55	182	630	

CS: constituent shift — Parl: parallelism — Part: parenthesis
OE: order of events — IS: iconic sound — RQ: r-question
+C: conjunction insertion — -C: conjunction deletion — Rep: repetition
Total t: total RD types — Clauses: total clauses in letter — %: percentage of RD types by clause

Table 6: Summary statistics for individual letters in editorial letter genre

	frequency of RD types per letter						clauses per letter					
	sum	**mean**	**s**	**range**	**min**	**max**	**sum**	**mean**	**s**	**range**	**min**	**max**
editorial letters (n=24)	182	7.54	4.35	14	3	17	630	26.25	2.66	38	11	49

so. As we can see in *Table 5*, the letters vary considerably first, in the total frequencies of RD types (3 to 17), and then as well, in the length as measured by the number of clauses (11 to 49). In terms of percentages, the range is 10.3% to 58.3%, a difference which is statistically significant difference (χ^2 (1) = 3.84, $p<.05$). There seem to be two possible sources for this variation between writers in this genre. First, the writer's choice of an RD type would tend to be based on the kind of information being conveyed and the function required of the type (this will be further discussed below), as was also the case with the unplanned letters in the previous study. That is to say, a writer did not use some types because she/he did not require them.

Second, in this sample, there is a tendency for the letters with controlled, more formal discussion to employ fewer of the RD types than those with a more emotional, more informal discussion. For instance, letter 18, a university professor's controlled, formal discussion of proposed changes to the teacher education program at the University of Alberta uses 4 RD types (23.5%) whereas letter 5, an emotional discussion of teenage pregnancy uses 17 (41.5%). This is reminiscent of the classical rhetoricians' observation that the structures described by some rhetorical devices resemble the speech of a person in a highly emotional state (cf. 3.2).

Given this trend for emotional discourse to use more RD types (at least those types tested here[1]) and given that several of the letters in this genre sample are emotional discourse, we would expect that the total number of RD types would be higher for this genre than the others. Similarly, the higher frequencies for parenthesis, r-question, and repetition could arise from the same source. Indeed, looking at the percentages, we can see that there is a tendency for these three types to occur with higher frequency in letters with scores over 35%. In the same vein, the higher frequency of these types can be related to the function of the RD types -- as we saw in the previous study, one of the uses for parenthesis was for inserting personal comments. In the editorial letters, there is abundant opportunity for it to be used the same way.

Returning our attention to a comparison of all six genres (*Table 4*), we can see that the results indicate that the frequency of occurrence for each type tends to vary, but if we look closely it becomes evident that this variation does not arise from planning. If we look first at the totals for each genre, the totals range from 16.0% for political discussion to 28.88% for editorial letters. However, these figures do not correspond to the genres with least and most available planning time. In fact, if we look at the genres with least and most available planning time, we can see that sports monologue (least planning time) actually has a *higher* frequency than tech/sci research (most planning time), though this difference is not a significant one.

There are significant increases (χ^2 (1) = 3.84, $p<.05$) between editorial letters and each of sports monologue, political discussion, and press conference, and as well, between political discussion and tech/sci popular. However, there are also significant differences in *decreases:* between editorial letters and tech/sci research, between editorial letters and tech/sci popular, and as well, between sports monologue and political discussion. In the other cases there are no significant differences. Of course, if available planning time determines frequencies, we would expect to see a trend of increases from sports monologue through to tech/sci

research. Rather, we see, in terms of statistical significance, four increases, three decreases, and no difference for the remaining eight cases. An examination of the total frequencies suggests then, that frequency depends on the genre rather than on available planning time.

When we look at the individual RD types, we see a similar variation. The frequencies for constituent shift and parallelism are highest (though not significantly) in press conference. Parenthesis and r-question are highest (significantly, χ^2 (1) = 3.84, $p<.05$) in editorial letters and tech/sci popular. Repetition is highest (significantly, χ^2 (1) = 3.84, $p<.05$) in press conference and editorial letters. But these do not correspond to increased planning time. In fact we can see quite clearly the variation is not related to planning time if we use the frequencies for sports monologue as a baseline: comparing sports monologue to the other genres, it is evident that the frequencies for the types *either increase or decrease* with planning time, depending on the genre.

Table 7: Occurrence of RD type structures in all genres from both production studies

Genre type	RD type structures									
	CS	Paral	Paren	OE	IS	RQ	CI	CD	Rep	Total
Spoken genres:	%	%	%	%	%	%	%	%	%	%
unplanned letter	3.15	4.28	2.36	1.75	0.17	0.52	0.96	0.26	5.07	18.53
sports monologue	3.91	3.26	1.95	3.91	1.95	0.65	0.65	0.33	4.89	21.50
political discussion	2.17	3.33	1.83	1.50	1.00	0.33	0.33	1.00	4.50	16.00
press conference	4.89	4.48	2.31	0.27	0.14	0.14	1.09	0.95	7.74	22.01
Written genres:										
unplanned letter	2.37	3.00	5.06	3.64	0.47	1.58	0.79	0.16	4.43	21.52
editorial letters	2.54	3.49	5.71	1.43	1.59	4.76	0.32	0.32	8.73	28.88
tech/sci popular	5.26	3.51	4.76	0.25	1.25	4.76	0	0.25	2.76	22.81
tech/sci research	3.53	2.56	0	5.77	0.64	1.6	0	0	2.88	16.99

CS: constituent shift — OE: order of events — CI: conjunction-insertion
Paral: parallelism — IS: iconic sound — CD: conjunction-deletion
Paren: parenthesis — RQ: r-question — Rep: repetition
%= percentage of total clauses in genre

spoken genres:
unplanned letter: 1144 clauses
sports fishing: 307 clauses
political discussion: 600 clauses
press conference: 736 clauses

written genres:
unplanned letter: 632 clauses
editorial letters: 630 clauses
tech/sci popular: 399 clauses
tech/sci research: 312 clauses

A comparison of these six genres with the unplanned letters in the production experiment provides a further opportunity to observe the effect of an increase in available time for planning and self-editing. For ease of discussion, the data for both studies is combined in *Table 7*. This comparison reveals that available planning time does not result in a tendency for an increase in RD type frequency. If frequencies are compared statistically between the unplanned spoken letter genre (*least* available planning time) and the other six genres, we find that there is only a

significant difference (χ^2 (1) = 3.84, $p<.05$) between the unplanned spoken letter and the editorial letters. For all the others, there are no significant differences.

In fact, if we look at the total frequencies for each genre, we see that the frequencies for the *unplanned* letters is actually *higher* than frequencies for some of the *planned* genres. In the spoken genres, frequency ranges from 16.00% to 22.01%, and in the written genres, it ranges from 16.99% to 28.88%. However, within the spoken genres, the unplanned spoken letter actually is higher than political discussion. And within the written genres, the unplanned written letter is actually higher than the most planned sample, tech/sci research.

Moreover, if we look across all the samples, the unplanned spoken letter (the genre with *least* available planning time) actually has a higher frequency than tech/sci research (the genre with the *most* available planning time). Thus, here the total number of RD type structures actually *decreases with planning* between least planned and most planned samples. Clearly, then, rather than variability related to planning, there is a tendency for variability among the genre types.

If we look at the individual RD types using this comparison between the unplanned letter genres and the six planned genres, we can see clearly that the frequency for the RD types tends to be stable across the genres tested: there is a tendency for all RD type structures to occur in every genre (with the exceptions noted above). Moreover, for any given RD type, an increase in available planning time did not necessarily result in an increase in frequency of occurrence: *both increases and decreases can be observed*. The clear tendency in this data is for type frequency to vary with the genre sample not with planning time.

A close examination of similarities in the most frequent RD types across the genres sheds some light on why this might be so. The top five for each of the samples is as follows:

spoken genres:
unplanned spoken: repetition>parallelism>constit shift>parenthesis>order of events
sports monologue: repetition>constit. shift | order of events>parallelism>parenthesis
political discussion: repetition>parallelism>constit shift>parenthesis>order of events
press conference: repetition>constit. shift>parallelism>parenthesis>conj-insertion
written genres:
unplanned written: parenthesis>repetition>order of events>parallelism>const shift
editorial letters: repetition>parenthesis>r-question>parallelism>consit. shift
tech/sci popular: constit. shift>r-question | parenthesis>parallelism>repetition
tech/sci research: order of events>constit. shift>repetition>parallelism>r-question

In the spoken samples, it is easy to identify the most frequent RD type across the genres. There is a clear tendency for repetition, constituent shift and parallelism to be most frequent.

In the written genres, it is not so easy to make such a neat summary statement. Parenthesis is highly frequent for three samples, but not at all for the fourth, where it occurs with 0% frequency. Repetition occurs in first or second place for two genres, in third place for one, but fifth place for the other. Constituent shift

occurs in first or second place for two genres, but fifth place for two. The written samples are, then, subject to much greater variation. It may very well be the case that this, at last, is an effect that planning has on RD type occurrence. In the written genre, there is more planning time and a greater potential for self-editing. It may very well be that at a least some marked linguistic structures of the RD type are *not edited in*, but are rather *edited out*. This may be an effect of prescriptive injunctions against certain "aberrant" structures, some of which break *prescriptive grammatical rules*.

Finally, an examination of the individual functions of the RD types within the six samples also provides some illumination about the role of RD types during production. Constituent shift is among the most frequent types found in the spoken samples and as well, for two of the written samples. As in the unplanned letters, it was used for the shifting of a variety of constituent types, for instance:

1a. But that would be much different than a formal alliance, because that would change completely, *of course*, the SEATO relationship and all the rest. [spoken: press conference. (sp:13;3,h32)][2]

1b. *To produce a quarterly profit-and-loss statement*, you use a spreadsheet. [written: tech/sci popular. (wr:6;5,h13)]

In 1a the constituent is shifted to a medial position and serves as an interruptive (i.e., it interrupts the syntactic flow), which may draw attention to the site of the interruption. In 1b it is shifted to initial position which tends to be highly salient. Clefting tended to be infrequent in all the planned genres, but when it did occur it tended to convey subjective evaluative comments, for instance:

1c. *What really surprised me was* an article on page B8 with a picture of Ron Ghitter, who indicates that the Reform party want Quebec to separate. [written: editorial letters. (wr17:12;3,h1)]

These functions for constituent shift are similar to those in the unplanned genres.

Parallelism was among the most frequent types in the spoken genres, and was also quite frequent in the written. In both cases it was used in a similar way -- to convey information that was central to the point currently being made, for instance:

2a. *By a slingshot, I don't mean* just using the bend in the rod and letting it go slack . . . . *By a slingshot, I mean* bending the rod and snapping the line. [spoken: sports monologue. (sp:4;2,p6)]

2b. The issue of visitation and child support are two separate issues *in the eyes of the law* and *in the eyes of any rational person* who does not feel children should become pawns in their parents' breakup. [written: editorial letters. (wr2:1;2,p1)]

This usage is similar to the unplanned letters, where it was used to covey specific points of evidence.

Parenthesis tended to be a more frequent type in the written samples though it was also quite frequent in the spoken. For both spoken and written samples, the tendency was for the type to convey information that was important for evaluating or understanding the point being made or, especially in the written sample, to insert a personal comment, for instance:

3a. The meeting with the Foreign Minister *(and I am going to meet with other foreign ministers when they come)* I assume will be in Washington. [spoken: press conference. (sp:5;4,p8)]

3b. Use the money to educate the teenagers in trouble *(cause that's all it is)* about adoption and that their babies will have a chance for a good life with adoptive parents who want and ask for these babies with their heart and soul. [written: editorial letters. (wr5:3;7,p2)]

These functions for parenthesis were similar to its functions in the unplanned samples.

Order of events was most frequent in the written tech/sci research genre and ranked second for the spoken sports monologue. It occurred for all the other genres, but less frequently. This type functions on both the global and local levels; however, in these planned samples, it functioned globally only for the written tech/sci research. At both local and global levels it functions to convey a noteworthy series of events, for instance:

4a. This program we set up. Then General Clay and his group, which included Mr. Eugene Black of the World Bank, Mr. Lovett, and others, looked at it. They made some proposals. [spoken: press conference. (sp:3;4,o1)]

4b. RAN initially asked for a one hour meeting with Alberta-Pacific . . . . We explained that it was not possible to assemble the people they wished to meet on short notice . . . . We offered to provide answers to any written questions . . . . [written: editorial letters. (wr12:7;2,o1)]

Again, the function of order of events for these samples is similar to the unplanned samples.

Repetition was the most frequent type in all the spoken genres, and occurred with consistent frequency in the written genres. This type also functions globally and locally. For the spoken genres, the tendency was for local frequency to be much higher than global -- as it was for the unplanned spoken sample. For the written genres (with the exception of the editorial letters) global and local frequencies tended to be comparable -- this is similar to the unplanned written genre. Repetition at both levels was used to convey subjective evaluative opinion, for instance:

5a. Remember, Bob Kerry is the guy who sat out during all those uh-- presidential primary debates and listened to candidate Clinton talk

about the need for middle class *tax cuts -- tax cuts, not tax increases but tax cuts.* [spoken: political discussion. (sp:4;1,r10)]

5b. It's a sure thing, a done deal: Come next year, you'll *switch* operating systems. And we know which one you'll *switch* to. *Call it Chicago, call it Windows 4.0* -- or just *call it the most eagerly awaited piece of software* since . . . well, since Windows 3.0. [written: tech/sci popular (wr1:1;1;r1)]

This usage is similar to that for the unplanned samples.

R-question tended to occur with higher frequency in the written genres, and was particularly high frequency for editorial letters and tech/sci popular. Two basic functions can be seen for this type. It's primary function was to involve or engage the hearer -- much as it was used in the unplanned genres. In the editorial letters an additional function was evident: chiding/scolding readers, reporters, government officials, etc.

6a. Ohh, there we go. uhhh How's that for a salmon? [spoken: sports monologue. (sp:3;2,r2)]

6b. The last time I checked, Mazankowski was thrown out of office. Why would the *Journal* go to this person for fiscal advice? Remember, it was his government that doubled the debt. [written: editorial letters. (wr17:12;4,r2)]

Constituent-insertion and constituent-deletion occurred with low frequency in both spoken and written samples, and as pointed out above, constituent-insertion did not occur at all for tech/sci popular, while constituent-deletion did not occur for tech/sci research. Constituent-insertion basically conveys a sense of unity (in the case of conjunction with 'and') or disunity (in the case of disjunction with 'or'). In addition, this type showed a tendency of functioning to convey a subjective sense of quantity, for instance 'so muchness':

7a. Cause when you don't want to drag a net down here-- It's hard enough getting down here with all the trees *and* the brush *and* your rod *and* your tackle box. You don't want a big net grabbin' all the bushes on the way. [spoken: sport monologue. (sp:4;4,p2)]

7b. How nice for Gwendolyn sitting in her ivory tower all cozy *and* warm *and* well fed. And how nice for her when the monthly Old Age pension arrives it seems like a bonus, something she doesn't deserve. [written: editorial letters. (wr9:5;2,p1)]

Constituent-deletion tended to function in a similar way in conveying a subjective sense of quantity, for instance:

8c. This will be true racially, socially, ethnically, geographically, and that is really, finally, the best way. [spoken: press conference. (sp:11;1,a3)]

8d. A life wrought with making it through every moment depending on someone else's pity and hand-outs, shopping at Good Will, constant public transit, no holidays, no new clothing, no new anything at all. [written: editorial letters. (wr5:3;3,p1)]

This use of conveying a subjective sense of quantity is similar to the function of these types in the unplanned conditions.

Iconic sound occurred with a low frequency in all the genres, but nevertheless, occurred consistently in each one. This type tended to function to add a subjective evaluative dimension to what was being said, for instance:

9a. I probably would have missed him if he hadn't hooked himself. It wasn't: set the hook, there he was. It was: *bloop*! there he was. And I didn't even know it. Those sharp hooks did it for me. [spoken: sport monologue. (sp:3;1,o1)]

9b. Senator Mira Spivak *whined* that many of her colleagues find it difficult to pay living costs in Ottawa. [written: editorial letters. (wr11:6;2,o1)]

This function is similar to that in the unplanned letters.

6.4 Conclusions

The results of the production text analysis study, then, clearly support the hypothesis: marked linguistic structures of the RD type do *not* show a general tendency to occur with greater frequency in genres that allow more planning time and self-editing. The tendency, rather, was for the RD types to occur consistently across genre types, regardless of modality or planning. The consistent occurrence of RD types across genres would be expected if these types functioned within the prominence strategy to code information that was important/significant to the discourse.

There was also a tendency for the types to occur in rather low numbers in these genres, never surpassing a 30% frequency. This relatively low frequency might be expected. First, the analysis was based on the specific RD types selected for this study; however, there are other types that might potentially code prominence (for instance, irony, hyperbole, litotes, simile were all in evidence in the data). Second, because these structures are *marked* in nature, it would be expected that they would have a low frequency. Third, it seems likely that important/significant information would occupy only a fraction of a given discourse; therefore, if these RD types are indeed coding important information, then a low frequency rate would be expected.

The results suggest, then, that these types are not simply stylistic variations that result from self-editing, but that they are, rather, produced during discourse

processing. As in the production experiment, the results of the text analysis study further support the inclusion of these devices in the prominence strategy.

A second finding of this study concerns the function of the RD types. As in the production experiment, RD types show a tendency to function in specific ways. For instance, several types function to convey evaluative information or other information that may be considered important and worthy of prominence coding. (This function of the RD types as devices for coding importance will be specifically addressed in the following comprehension study.) The indication that RD types function in specific ways may also have a bearing on their frequency of occurrence in a given genre. Whether or not a type occurs may well depend on whether or not its specific function is required for conveying important information. Thus, it may well be that it is the nature of the subject or topic being discussed rather than the specific genre that determines whether an RD type occurs.

Associated with this issue of RD type function and its effect on frequency, is the issue of individual subject variability. In the data produced by the speakers and writers for both the production studies, there was evidence of variability. Speakers/writers varied in the RD types they selected. However, the variability seems largely attributable to the varying functions of the RD types -- i.e., speakers/writers selected a given type based on its ability to perform a required function.

A third finding of this study concerns the role of self-editing. As mentioned, an increase in available time for planning and self-editing did not result in a tendency for an increase in RD type frequency. But the effects of self-editing may be visible in other ways. In the case of the written genres, the absence of three RD types in two genres might be partially attributable to an editing-out process resulting from prescriptive dictates against such "aberrations". Secondly, again within the written genres, there was great variability in which RD types were most frequent; this might also be the result of self-editing and prescriptive influences. For at least some RD types, then, frequencies may be the result of *editing-out* rather than, or in addition to, editing-in RD type structures. This may be the result of prescriptive injunctions against the use of certain types of marked structures.

The absence of RD types in certain genres, as was noted above in three instances, raises the question of whether their absence indicates that they do not function in a genre. Of course, it must be recognized that the absence of these types does not necessarily mean that they never occur within the genre in question. Further production studies examining several samples within the same genre would be essential to determine whether the types really do never occur within the genre.

As for the actual function of the RD types, these production studies suggest that each RD type tends to function in specific ways. The precise dimensions of those functions are, of course, a matter for future research; this question would best be examined within a series of studies that focuses on each RD type and its function within several samples from the same genre, then within differing genres.

In terms of the prominence strategy, these production studies provide evidence that the RD types studied do occur in a range of unplanned and planned genres, and in addition, these studies also provide some indication that the types

function to code important information as prominent. Thus these findings provide support for a prominence strategy that operates during discourse production. However, the question that remains concerns the role of the prominence strategy during discourse comprehension. Do hearers actually use these RD type structures as a cue to which information is most prominent? This question is the focus of the comprehension study that follows.

Notes:

[1] It should be noted that this generalization applies only for the RD types tested here: That is to say, for the RD types examined here, more emotional usage tends to use more RD types. There are, however, other types possible, many of which are observable in the data -- for instance, irony, exaggeration, understatement, simile, warning/advice. These may also function in prominence coding, but this is, of course, a matter for future research.

[2] This coding notation provides information about the modality, the genre type, and the location within the data sample, e.g., [written: tech/sci popular. (wr:12;4,3)].

Chapter 7

The comprehension experiment

7.1 Introduction

The comprehension of prominent information has not been addressed at all in research examining prominence through the grounding approach. These studies use the functional analysis of text data to determine the coding devices used in foregrounding, a methodology that has many strengths for the study of production data, but does not provide any way of examining issues in discourse comprehension. This is a further weakness of this approach, since, of course, it remains unknown whether the proposed coding devices are actually used by communicators during comprehension.

One of the particular strengths of the psycholinguistic approach used in the present research is that it provides a way of investigating just such processing issues not only in production but also in comprehension. The investigation of RD type structures in prominence coding which is being undertaken here has been focusing specifically on their discourse processing function and their role as part of the prominence strategy proposed in 3.3.3. Thus far, the findings have provided support for their role in production -- both speakers and writers in a range of genres, both unplanned and planned, use these RD type structures. The question that remains is whether these types are used during comprehension by hearers and readers.

To examine this question, an experiment was conducted to examine the effect on comprehension of eight of the RD type structures described in 4.2. Subjects in four conditions read or listened to discourse passages in which these types were used to code specific information. Subjects then responded to cued recall questions which tested the recall of information encoded by RD types. The hypothesis being investigated was that the coding of information within RD type structures affects recall. It was expected that subjects would tend to recall information encoded within an RD type better than they would recall the same information not so coded, thereby providing support for the function of these coding devices within the prominence strategy during comprehension.

7.2 Method

The experiment used two main conditions (CI: spoken and CII: written) each of which contained four discourse passages. The passages were based on four different genres: conversation, tech/sci, narrative, news. In each passage, specific information was coded with RD types, such that the passages used in each condition were identical except that each specific instance of an RD type in one condition (CIa,

CIIa) was paralleled by its absence in the other condition (CIb, CIIb), yielding the arrangement shown in *Table A1* in *Appendix 3*. The preparation of the stimulus passages was accompanied by the construction of the cued recall questions which tested recall of information that was coded by the RD types. The recall questions consisted of thirty-two multiple-choice questions, each with five options. (The recall questions and stimulus passages used in this experiment can be found in *Appendix 4*.)

7.2.1 Preparation of the stimulus passages

The preparation of the stimulus passages presented considerable difficulties and was a very lengthy process. The selection of passages was made according to specific criteria. For inclusion as stimuli within the experiment, it was necessary that each passage:

1) be short enough to include in an experiment of this type (about 500 words) but long enough to contain a variety of RD types,
2) be sufficiently self contained so that a lack of context would not create problems for comprehension,
3) be sufficiently interesting to hold the subjects' attention,
4) be sufficiently general to be comprehensible by all the subjects, i.e., they must not require specific technical or other background information for comprehension, and
5) contain four of the eight RD types being investigated.

Initially an attempt was made to take excerpts of discourse passages from an already existing news article, narrative, conversation, etc. However, it became evident very quickly that this would not be feasible -- it was difficult to find passages meeting even two or three of the above criteria.

Consequently it was necessary to construct stimulus passages especially for the purpose of this experiment. This was not a simple matter, given the essential criteria posed above, and moreover, given the nature and function of RD type structures. Prior to this present research, very little was known about which RD type structures might function as prominence devices and indeed, how they might function; consequently, little was known about what kinds of discourse structures should be eliminated or controlled for in the stimuli. This became a matter of trial and error that was sorted out during three pilot studies.

Only one previous study (Abraham 1994b) has studied these structures in comprehension. Since this study found a tendency for interaction between RD types and context, it was anticipated that such interactions would have to be contended with during stimulus construction. However, during the pilot studies, it was found that RD types not only interact, but also, that they tend to interact in unexpected ways. First, RD types interact with other RD types, such that for instance, a discourse construction like:

RD type X . . . . . RD type Y

might produce a recall effect for type X but not type Y. But if type X were *removed*, leaving only type Y, then type Y would *no longer* produce a recall effect.

Second, just as in the earlier study, it was also found that RD types interact with the context. Thus for instance, RD type X would produce a recall effect in a certain context, but if the context were altered, then the recall effect could disappear. And then too, although RD type X might produce a recall effect in one discourse, if the complete discourse construction containing that RD type X were transferred to a different discourse, the recall effect could disappear. So then, essentially, there was no guarantee that the presence of any given RD type would necessarily produce a recall effect. Whether or not it actually did depended on the interactions between the RD types and between the types and the context.

Whether or not a recall effect would occur also tended to depend on other factors. The presence of an RD type would not affect recall if the meaning encoded was in any way ambiguous or unclear. Also, a recall effect would not occur with certain tokens of a particular type -- for instance, in constituent shift, the fronting of a constituent that was very long could impede recall. This seems to suggest that an RD type is based on a prototype, and that certain tokens of the type which deviate extremely from that prototype cannot produce a recall effect. As well, the nature of the prototype seemed to deviate between genres and modality. For instance, in the case of constituent shift, the written modality seemed to tolerate the fronting of a longer constituent than did the spoken. Thus the presence of an RD type would never guarantee a recall effect.

The stimulus construction also revealed two other things about the nature of RD types. One concerned the range of possible RD types: it was found that certain RD types *not* under study here could also produce recall effects, for instance, quotations, warnings, advice, and exaggeration. The other concerned the individual functions of RD types, such as was indicated in the production studies. The function of the individual types was a critical factor during construction. One device cannot convey the same information and convey it with the same effect as another -- for instance, parallelism cannot convey the same information as constituent shift or repetition or iconic sound, and so forth.

Essentially then, it could *not* be said that the construction of the stimuli was simply a matter of writing four passages and popping in the requisite RD types. This is as far from the truth as Kansas is from Oz. Rather it would seem that RD types function synergistically within a complex system. The precise nature of that system is, of course, a matter for future research, but the stimulus construction process has indicated some definite directions for that research.

After the four stimulus passages (each with two versions) were constructed, they were prepared for experimental use in the spoken and written conditions. For the spoken condition, they were audio taped by two native speakers of English, one female and one male. The recordings of each passage simulated the natural speech of each genre. The speakers were asked to imagine themselves in the situation and to use the appropriate prosodics. The narrative passage (*Samantha gets lost in Chicago*) simulated a conversational monologue, i.e., as it would spoken by someone relating the incident to a friend. The technical/scientific report (*Scientists*

fear skin cancer link to sunscreens) simulated the situation where someone who had researched the issue was reporting back with her/his findings. The conversation (*Cindy's phone interview*) simulated a natural conversation between two friends. The news report (*A winning career*) simulated a report on a television news program.

The passages were presented consecutively to the subjects, and then followed by the questions. The order of presentation for the passages was the same for each condition. Order was determined by attentional factors and by the relative comprehension difficulty of the passages. The narrative, the most engaging passage, was placed first to engage the subjects' attention. The technical/scientific report, the most demanding passage was placed second, in a position where subjects' would encounter it while (now) attentive and still relatively fresh. The conversation, an engaging passage and the least demanding, was placed third, in a position where it would give the subjects a bit of a break and also re-engage any flagging attention. The news report, again more taxing, was last.

7.2.2 Procedure

A total of 145 subjects participated in this study on a volunteer basis, 42 were male, 103 female. They ranged in age from 18 to 45. The subjects were assigned randomly to the four conditions: spoken conditions: CIa: 35 subjects: 8 males, 27 female; CIb: 35 subjects: 12 male, 23 female; written conditions: CIIa: 40 subjects, 11 male, 29 female; CIIb 35 subjects: 11 male, 24 female. All the subjects were students in undergraduate linguistic courses at the University of Alberta, and all were native speakers of English.

Subjects were told that the purpose of the study was to examine how different kinds of language usage affect comprehension. In accordance with ethics policy, they were assured of the anonymity of their participation and also of their freedom to withdraw from the study. (Subject instructions can be found in *Appendix 4.*) In each of the conditions, subjects were asked first to read (or hear) the discourse passages and then to answer the questions. There was no fixed time limit; subjects were allowed to work at their own pace.

7.3 Results and discussion

The subject responses were scored, then the score for each RD type was determined. Independent measures t-tests were used to compare each of the type scores in each *'a'* condition (CIa, CIIa) with its counterpart in each *'b'* condition (CIb, CIIb) -- i.e., the recall of each question that tested information coded with an RD type was compared to the recall of each question that tested information not so coded. In the summary statistics for the subject scores, the central tendency and variability measurements suggest similarity between the groups (see *Table A5* in *Appendix 5*). A summary of the results for the RD type scores is presented in *Table 8* (for detailed summaries of scores and t-statistics see *Appendix 5*).

In most cases, a statistically significant difference was found between recall scores for RD type coded information and recall scores for information not so coded ($t(73) = 1.995$, $p<.05$, 2tt). In the spoken conditions, the recall effect was found for

Table 8: Recall effects for RD type structures across all genres in all conditions in the comprehension experiment

Genre type	RD type structures							
	CS	Paral	Paren	OE	IS	RQ	CI	Rep
CI: Spoken:								
narrative	*	*	*	*	*	*	*	*
tech/sci	*	-	-	*	*	*	*	*
conversation	*	*	*	*	*	*	*	*
news report	*	*	-	*	*	*	*	*
CII: Written:								
narrative	*	*	*	*	*	*	*	*
tech/sci	*	-	*	*	*	*	*	*
conversation	*	*	*	*	*	-	*	*
news report	*	*	-	*	-	*	*	*

CS: constituent shift
CI: conjunction-insertion
IS: iconic sound
Paren: parenthesis
OE: order of events
Paral: parallelism
Rep: repetition
RQ: r-question
* indicates significant difference in recall within the condition ($t(73) = 1.995$, $p < .05$, 2tt)
- indicates no significant difference in recall within the condition

Table 9: Occurrence of RD type structures in all genres from both production studies

GENRE TYPE	RD type structures								
	CS	Paral	Paren	OE	IS	RQ	CI	CD	Rep
Spoken genres:									
unplanned letter	*	*	*	*	*	*	*	*	*
sports monologue	*	*	*	*	*	*	*	*	*
political discussion	*	*	*	*	*	*	*	*	*
press conference	*	*	*	*	*	*	*	*	*
Written genres:									
unplanned letter	*	*	*	*	*	*	*	*	*
letter to editor	*	*	*	*	*	*	*	*	*
tech/sci popular	*	*	*	*	*	*	-	*	*
tech/sci research	*	*	-	*	*	*	-	-	*

CS: constituent shift
Paral: parallelism
Paren: parenthesis
OE: order of events
IS: iconic sound
RQ: r-question
CI: conjunction-insertion
CD: conjunction-deletion
Rep: repetition
* indicates occurrence of RD type structure in the genre
- indicates no occurrence of RD type structure in the genre

all RD types except parenthesis and parallelism in the tech/sci genre, and parenthesis in the news genre. In the written conditions, a recall effect was found for all RD types except parallelism in the tech/sci genre, r-question in conversation, iconic sound in

news, and parenthesis in news. For all the other RD types, recall was facilitated by RD type coding.

In all, the function of RD types was tested in 64 cases. The results suggest that in 57 of the cases, the subjects used the RD coding as a cue for prominence. In only 7 cases did the RD types not seem to function in this way. This might suggest that these 7 types do not function to cue prominence in these genres. To consider the function of these 7 deviant cases, it is helpful to compare the results of this study with the results of the production studies. (For convenience of discussion, the results of the production study are summarized in *Table 9*).

The production studies indicated that although most of the RD types in question do indeed occur in the genres examined, a few types did not. For instance, parenthesis was absent in written tech/sci research in the production data. If we compare this to the comprehension study, we find that coding with parenthesis did not produce a recall effect in the spoken tech/sci genre (though it did in written tech/sci). There are other comparisons that we can make. In the production data, conjunction insertion did not occur in the either of the written tech/sci genres, but in the comprehension study, it did produce a recall effect in both the spoken and written tech/sci. Parallelism occurred in all genres in the production data, but it did not produce a recall effect in either tech/sci spoken or tech/sci written. Iconic sound occurred in all the genres, but it did not produce a recall effect in the news report. And finally r-question occurred in all the production genres, but it did not produce a recall effect in the written conversation though it did in the spoken.

It is difficult to draw firm conclusions about these 7 deviant cases. Basically, however, it is possible to identify two situations. In one situation, an RD type was absent in a production genre but produced a recall effect in the corresponding comprehension genre. In the other situation, an RD type was present in a production genre but did not produce a recall effect in the corresponding comprehension genre.

In the cases where an RD type was absent in the production data, but nevertheless, did produce a recall effect in the comprehension study, it might be, as was suggested in Chapters 5 and 6, that the RD type did not occur because the communicator did not require it to perform its specific function for conveying information. Alternatively, as was also suggested concerning genres with high available planning/editing time, these types may have been edited out. In either case, the indication is that *the RD type was available but not used* for some reason. This result would be better understood with further research.

In the cases where the RD type did occur in the production data, but did not produce a recall effect in the comprehension study, a potential answer is less evident. However, it seems quite possible that such RD types are instances where the token used in the stimulus passage deviated from the prototype to too great a degree (i.e., the token is not highly marked). Thus it may not be safe to conclude that the particular RD type in question does not function in the genre in question. It may simply be that the token is too weak to produce an effect. One way to establish this would be with further research testing the same token in other samples of the genre.

Returning our attention to the 57 remaining RD types that did cause a recall effect, we may find it tempting to regard the scores for these types as somehow representing their 'strength' for a recall effect in a particular genre. However, a comparison of the relative 'strength' of the RD types within a single genre passage would result in the confounding of a several factors, including semantic and discourse -- each RD type codes different information in a different discourse position. In addition to that, given an apparent tendency for RD types to interact, each recall score for each RD type does not simply represent how many subjects recalled the type. It would seem that the score must also measure how the RD type interacts with other RD types and with the context. Thus in the 57 cases where RD type coding did cause a recall effect, that effect may not necessarily be attributed entirely to the RD type itself, but rather to its function in the particular genre in question.

What the results for these 57 RD types do indicate, then, is that these types tend to affect recall in the four genres tested: narrative, tech/sci, conversation, and news. This ability to affect recall suggests that they do indeed function to code prominence, and moreover, that this prominence-coding function is not limited by genre type. Secondly, this recall effect was present in both the spoken and the written conditions, suggesting that that the prominence-coding function of the types is not limited by modality.

7.4 Conclusions

The findings of this study, that the RD types tend to affect recall in the four genres tested, provide strong support for the hypothesis. The comprehension effect of these types seems not to be limited either by modality or by genre (at least for the genres tested). This suggests that the RD types tested here do function to code prominence, and supports their inclusion within the prominence strategy during comprehension.

This study also provides an indication of just how much research is required before RD types and their function in discourse processing can even begin to be understood clearly. Several directions for future research are indicated. For instance, one direction would be the study of RD type prototypes. It may be the case that not all tokens of an RD type are equal, but rather that tokens closer to the prototype are stronger. And indeed, prototypes themselves may also vary with genre. Another direction concerns RD type function, both the individual functions of the types and their apparent tendency to function synergistically. Much research is necessary before the role of RD types in comprehension can be understood.

Chapter 8

Conclusions

8.1 Theoretical implications for discourse processing

8.1.1 The prominence strategy

The objective of this investigation has been to investigate the function of marked linguistic structures (similar to those described by classical rhetorical devices) in the coding of discourse prominence. The specific focus was on a set of nine types of marked linguistic structures that were based on thirty-four classical rhetorical devices. A series of empirical studies was used to examine the general hypothesis that these RD types function in coding discourse prominence within a cognitively based prominence strategy.

First, a production experiment was used to ascertain whether these RD types were the result of planning/self-editing or whether they occur naturally during discourse processing. The results of this study suggest that RD types occur consistently in unplanned spoken and written discourse, indicating that they do indeed originate during processing. Second, a production text analysis study was used to further investigate the planning question, this time in a range of spoken and written genres varying in planning time, in order to determine whether available planning/editing time resulted in an increase in RD types. The results suggest that RD types tend to occur consistently and with similar frequency in planned spoken and written discourse, suggesting that RD type coding is not determined by genre or modality or available planning/self-editing time. Third, a comprehension experiment was used to ascertain whether the RD types affect recall. The results of this study indicate that RD types do tend to facilitate recall in a range of spoken and written genres, suggesting that they function in coding prominence during comprehension.

Overall, then, the results of these studies suggest that these RD types function in prominence coding during both production and comprehension. The findings indicate that during discourse processing, speakers use such marked linguistic RD types to code important/significant information as prominent. And hearers use such RD types as cues to which information is important/significant to the discourse. The results of these three studies, then, provide support for the thesis that these RD types function in prominence coding within a cognitively based prominence strategy.

In 2.3 it was suggested that an adequate assessment of the prominence phenomenon (i.e., a theory of discourse prominence) should minimally be able to characterize prominence in terms of (1) its fundamental nature, (2) how and why the speaker codes it, (3) how and why the hearer uses it, and (4) how it functions in discourse. We might examine the findings of this investigation in terms of these minimum requirements.

First, regarding the fundamental nature of prominence, this investigation has maintained throughout that discourse prominence is the phenomenon in which linguistic units differ in their perceptual salience to the communicator, such that greater salience of information represents greater *importance/significance* to the language user. (This is not a common view of prominence. As was indicated in 2.2.1.4, the discourse/event grounding approach adheres to the gestalt tenet of perceptual neutrality -- foreground is not more important than background.) The findings of the present investigation provide support for a firm link between discourse prominence and importance. Discourse prominence is, fundamentally, salience that represents importance/significance to the language user.

Second, regarding how and why the speaker codes prominence, this is related to the prominence strategy as it is used during discourse production. (This issue is left unaddressed by discourse/event grounding studies.) The findings in this investigation suggest that speakers use RD type devices to code important/significant information as prominent during discourse processing. This occurs within a cognitively based prominence strategy, which as was pointed out in 3.3.2, arises out of processing limitations related to memory and attention. Essentially, then, speakers code prominence with marked linguistic structures of the RD type and they do so because prominence coding with these types provides a principled means of conveying important information, which facilitates discourse production.

Third, regarding how and why the hearer uses prominence, this is related to the prominence strategy as it is used during comprehension. (This is left partially unaddressed by the discourse/event grounding approach, which posits a variety of devices for coding prominence, but leaves unaddressed the issue of why these devices are used.) The findings of this investigation suggest that hearers use RD type coding devices as a cue to which information is especially important/significant to the meaning being conveyed during the discourse. As pointed out in 3.3.2, this occurs within the prominence strategy which arises out of cognitive limitations. Essentially, then, hearers use prominence coding as a cue for importance, and they do so because, given such cognitive limitations as those associated with limited working memory and limited attentional resources, prominence coding facilitates comprehension. For instance, strategic coding increases predictability and decreases the demands on limited attentional resources.

Finally, regarding how prominence functions in discourse, this is related to discourse processing. (The function of prominence is left unaddressed in discourse/event grounding studies.) Structurally, it seems evident that prominence must play a role in discourse organization, since it serves to partition a discourse in terms of salience and in terms of importance. As well, it seems likely that prominence also plays a role in coherence, since salience would serve to link together information that is important. However, the results of this investigation suggest that prominence also plays a far more critical role. As pointed out above, within the prominence strategy, speakers use prominence to code important information and hearers use it to assess the relative importance of all the information in the discourse. This would suggest that the prominence coding system, as it is represented by the prominence phenomenon, is very important cognitively -- *it*

determines to some degree what is stored in the communicator's memory. This would suggest that prominence is critical in discourse, because the complete *absence* of prominence in a discourse would make the discourse virtually *incomprehensible*. This is a matter for future research.

8.1.2 RD type coding devices

This investigation has focused on nine marked linguistic structures of the RD type. In Chapter 4 (see also Chapter 3), the discussion centered on the cognitive basis of these types and their potential for producing comprehension effects, such as primacy, recency, frequency, markedness, iconicity, and chunking. The results of this investigation suggest that this potential can indeed materialize as an effect on recall.

The results also suggest that the presence of an RD type in a discourse does not guarantee a recall effect. This situation seems to arise out of the fact that the function of RD types is highly complex. There is, in fact, some indication that RD types function synergistically within a complex system which, at present, is scarcely understood. There are many directions for future research. For instance, the production study suggests that each RD type functions in a specific way. The comprehension study, in particular the stimulus construction process, suggests that these functions do not seem to be interchangeable -- one RD type does not seem capable of functioning in place of others.

Several other interesting directions for research are suggested by the comprehension study. First, there is the indication of an interaction between RD types with other types and also with context, such that the recall effect of one device may be dependent on the presence of another. Second, there is the indication of an inequality between tokens of an RD type, such that they seem to vary in strength, depending on their distance from a prototype (those which are extreme deviants seem incapable of causing a recall effect). This prototype may vary between modalities, and also from genre to genre, such that for instance, in conversation, the prototype may be less complex cognitively, e.g., in the case of constituent shift, the fronting of a constituent that is too long may impede comprehension rather than facilitate it. Overall, then, the indication is that RD types are very complex, and much research is necessary to even begin to understand them.

Given these complex scarcely understood issues surrounding RD types and their function, it is vitally important that the drawing of conclusions based on the present research be done with care. As pointed out above, the presence of an RD type does not guarantee an effect on comprehension; nevertheless, given the results of the comprehension study, RD types can and do affect recall -- in 57 out of the 64 cases, recall was affected significantly; in only 7 cases was there no recall effect.

Consequently, what these results *do* suggest is that these RD types function in coding prominence and may affect recall. What these results *do not* suggest is that simply popping an RD type into a discourse will necessarily cause a recall effect. There seem to be other factors involved, for instance whether or not the information being expressed is unclear or ambiguous, and whether or not the discourse contains other RD types and what those types are. The number of types in a discourse may

also be a factor. The classical rhetoricians warned against the use of too many rhetorical devices (cf. 3.2); their warning may indeed have a bearing here -- if too many RD types are present, it could create problems during discourse processing. To put it in gestalt metaphor terms, not everything can be foreground.

Whatever functions RD types have and however these functions operate, it would appear that the production of RD types in natural discourse must proceed in a efficient way, and that by and large, speakers are quite good at using RD types for prominence coding (this may indicate that in future research, a focus on natural unplanned discourse would be especially informative). Of course, misunderstandings do occur in communication, but given the complexity of discourse, it would be difficult to attribute such cases to a speaker's failure to code prominence adequately -- though this might well be the case.

However, it seems quite evident that problems in using RD types can arise when artifice is employed (i.e., when RD types occur as a result of planning/self-editing). A good illustration of this occurred in February 1994 when, as part of its budget cutting maneuver, the Alberta government issued a ten page document entitled *Information on the proposed Alberta seniors benefit*, which was distributed to senior citizens in the province. The document elicited the following response, which appeared as a letter to the editor in the *Edmonton Journal*:

> I found in my letter box a government brochure entitled "Alberta Seniors Benefit" -- a 10-page document in which the word "benefit" appears no fewer than 77 times.
>
> This must be a record for repetition, even in government promotions. I think I am supposed to believe subliminally, after reading "benefit" 77 times, that I will be the beneficiary of some high favor, even though a rough analysis shows these "benefits" will cost me several hundred dollars annually.
>
> There is no doubt some cuts must be made to make up for the squandering of public funds by this government in the past few years. But they are cuts. Not benefits. It is in typical bad taste to call them anything else.

Saying something does not make it true. Never has. Never will. Using RD types does not change that basic fact. Clearly there is more to prominence coding than popping an RD type into a discourse. How much more is a matter for future research.

8.2 RD type prominence coding devices and discourse/event grounding devices

As discussed in 2.2, the discourse/event grounding approach has posited a range of coding devices, all of which are restricted to coding foreground in the narrative genre. These narrative type grounding devices (e.g., tense, aspect, etc.) are clearly genre specific. However, the RD type coding devices under investigation in the present study seem to function in a range of genres -- from conversation to technical/scientific, and *including narrative*. The finding that RD types function in

narrative indicates that an integration of the two coding systems might be possible. An integration of these systems would, of course, be desirable to achieve a unified and coherent theory of discourse prominence.

Theoretically speaking, it may well be that the two coding systems both code prominence, but at different levels. Alternatively, the link between them might be much stronger. One of the devices used in the prominence strategy is order of events. When this device functions in a narrative discourse, it appears in the form of temporally sequenced events. As it happens, temporally sequenced main events are the basis for all narrative grounding devices. In fact, essentially, foreground is defined by temporally sequenced main events. This suggests that possibly narrative type coding devices (i.e., grounding devices) might be part of the prominence strategy -- possibly even a sub-type within the order of events type.

However, subsuming grounding devices in this way causes the prominence strategy to lose its cohesiveness, such that its precise form seems uncertain. For instance, a particular difficulty arises in the conflict between the prominence strategy tenet that importance *is* related to prominence and the discourse/event grounding tenet that importance *is not* related to prominence. Clearly, prominence cannot represent both importance and non-importance at the same time. Of course, a resolution of this conflict might be possible. Such a resolution would focus on an empirical evaluation of the claim that grounding actually is perceptually neutral, i.e., unrelated to importance.

8.3 The universality of RD type structures in language processing

8.3.1 Genre specificity

The three empirical studies in this investigation have, to some degree, examined the genre specificity issue. For the range of genres examined here, it was found that RD types are not restricted in either their occurrence or their frequency by genre type, either on the basis of modality or available planning/self-editing time. However, there is a great deal that remains unknown. There are many more genres than those studied here. To fully understand the coding function of RD types, it would be necessary to look at the frequency and function of RD types in a wider sample. For instance, since RD types tend to have specific functions, it may well be that certain types tend to occur more frequently in certain genres depending on their functions. As well, genre studies would be especially important for understanding the nature of the RD types themselves, particularly in terms of the possible variation of prototypes between genres.

8.3.2 Language specificity

The present research has been restricted to English, and of course, the finding of prominence-coding by these RD types cannot be generalized to include other languages. It is possible that this coding system is language specific. However, since the prominence strategy is cognitively based, it seems highly probable that it might very well be used by all communicators regardless of their language. Indeed, since markedness seems to be a fact of language, it may well be that discourse markedness functions similarly in the prominence coding of all languages. Thus, RD types such

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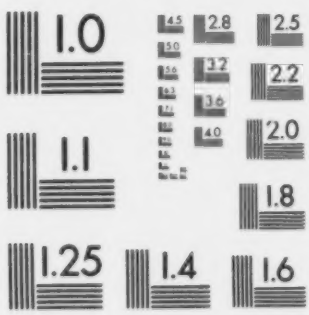

as those examined here might well be expected to occur as coding devices in other languages. Support for this thesis can be found beyond the confines of this study.

Consider, for instance, that it was the Ancient Greeks whose early observations resulted in the classification and study of classical rhetorical devices. It was, in fact, those observations, as recorded in the classical rhetorics, that indicated the cognitive basis of the devices, which pointed the direction for the present research (see Chapter 3). Thus, in the classical rhetorics, we can see some indication that the marked linguistic structures examined here not only occurred in Ancient Greek, but also might have functioned to code prominence in that language.

Further support comes from Walrod's (1988) study of discourse in Ga'dang, a Philippine language. In this study of informal litigation in Ga'dang, it is possible to find at least five, and perhaps six, of the RD types that have been the focus of this study. Walrod notes specifically the occurrence of parallelism, asyndeton (conjunction deletion), and chiasmus (a type of repetition). In addition, a scrutiny of his transcription of a Ga'dang litigation suggests the occurrence of order of events, r-question, and possibly, constituent shift. Consider for instance:

1. *r-question*:
Aryan tam ira a intremente a bungut, se
remove we.inc pl rl instrument rl anger, because

sanna ino surbi na nio bungut?
what the use its the anger

Let's get rid of that anger thing, for what's the use of anger? [Walrod 1988:165, #250]

2. *conjunction deletion and repetition*:
Reforma, mangangkakwa. Reforma, mangangkakwa.
reform change reform change

Reform, change. Reform, change. [Walrod 1988:159, #211, 212]

3. *parallelism*:
E nu amme yu mattalaw a massiri ki Dios anda
and if not you.pl fear rl to.lie to God and

amme yu mattalaw a mamalapanday si sapit,
not you.pl fear rl slander in speech

kunnanatan nu nakasapit kayu si narakkat a mekontara
even.though if able.say you.pl obj bad rl against

so layag daw si'in ibukkat daw to ingke'in ta
at ears yours before remove you.pl here now so

makkapakapakoli kayu.
reciprocal.forgive you.pl

And if you are not afraid to lie to God, and not afraid to slander, even though in the past you could say bad things that were offensive to hear, get rid of that at this time so you can forgive each other. [Walrod 1988:136, #26]

The above examples suggest the possibility that such RD types may be used to code prominence in Ga'dang. Future research might well focus on these types in terms of their frequency of occurrence and function in this genre (informal litigation) as well as other genres in Ga'dang.

Such observations suggest that future research examining the issue of language specificity would be very revealing about the nature of discourse processing. In particular two types of studies would be very informative. It would be useful to examine languages, such as Hawaiian, which have a spoken tradition that is far stronger than the written one. It would also be useful to examine languages that have no written tradition. Such studies would provide evidence about language specificity and discourse processing, and they would reveal something about how RD types function, and whether or not the presence or strength of a written tradition affects the RD types used in the prominence strategy.

8.4 Future research

This investigation began with an inkling that RD type structures might function in the coding of prominence. It ends with an accumulation of evidence supporting the function of such types in a cognitively based prominence strategy. In the course of the investigation, while many questions have been examined, many more have leaped into the foreground and now demand attention. Thus, as indicated in the above discussion, there are many directions that future research can take.

Many of these concern the RD types themselves. For instance, in the course of the production and comprehension studies, several other possible types were noted, for instance, irony, warning/advice, exaggeration, understatement, and quotations. This raises the question of how many RD types might actually function in prominence coding. Then too, the present investigation also encountered indications that the prototype of each RD type may differ with genre. This raises the question of whether the coding devices are the same in all genres, or indeed, in all languages. As well, the findings of the research also indicate that RD types tend to have specific individual functions, and that the types may interact. This raises still another question concerning precisely how the types function, both individually and synergistically, and whether the functions may vary with genre, or perhaps language. Overall, there are numerous facets to the questions of genre specificity and language specificity, all of which must be addressed.

As well, the potential influence of a written tradition on prominence coding in a language is a very intriguing one. In the present study, some indication of possible

effects of the prescriptive tradition were noticed. For instance, in the production study, certain RD types were absent or occurred with very low frequency in the written tech/sci genres (the highest in potential planning and self/other-editing). However, in the comprehension study, the same types had a recall effect for the tech/sci passages. The recall effect suggests that the type was available to the writer, but that it was not used for some reason. That reason might very well be that these marked structures were edited out -- i.e., the writers were influenced by prescriptive injunctions against the use of such "aberrant" linguistic usages. This raises still other questions: Do prescriptive injunctions against certain marked linguistic usages impair prominence coding to any degree? Or does the writer find other ways of fulfilling the same function? If so, do these alternative coding devices function with the same effectiveness? Or does this, like the case of the 77 repetitions in the government document (8.1.2), become a situation where resorting to artifice threatens to impede comprehension?

Overall, the findings of this investigation have been a substantial stride forward in understanding the prominence phenomenon, the function of RD types as coding devices, and the role of the prominence strategy in discourse processing. These findings open the way to a new area in discourse research, an area fairly abounding with unanswered questions. Thus, this research has indeed been a considerable stride forward, but nevertheless, it is still only the first step in a journey of a million miles.

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Appendices

APPENDIX 1 Instructions and letter used in the production experiment

Condition I [spoken] *Instructions to subjects*

1. Please imagine yourself in the following situation:
   You have received the attached message from a friend asking you to watch part of a TV program, which he is interested in but is unable to watch. He asks you as a favor to watch the program segment, and then to send him a brief cassette-letter explaining what you saw.
2. You will watch the program segment, taking brief notes as you do.
3. You will respond to your friend's request in a cassette-letter.

Do you have any questions?

Message

Hi! I've just heard that Unsolved Mysteries is doing a segment about the outlaw Butch Cassidy. Apparently someone has uncovered some new evidence about him that indicates that he did not really die in a gun fight in Bolivia -- you know, like they showed at the end of the movie, Butch Cassidy and the Sundance Kid.

They say that he lived out his life as William Phillips in Spokane, Washington!

I'd really like to watch this but I missed it on the local station, and as you know, we don't have cable out here in the country. Would you do me a tremendous favor and watch this for me?

I'm particularly interested in the evidence they present. And of course, I'd be very interested in your opinion. What do you think about it all?

Please send me a cassette-letter as soon as possible. I'll be looking forward to hearing from you.

Thanks. I owe you one.

Condition II [written] *Instructions to subjects*

1. Please imagine yourself in the following situation:
   You have received the attached message from a friend asking you to watch part of a TV program, which he is interested in but is unable to watch. He asks you as a favor to watch the program segment, and then to send him a brief letter explaining what you saw.
2. You will watch the program segment, taking brief notes as you do.
3. You will respond to your friend's request in a letter.

Do you have any questions?

Message

Hi! I've just heard that Unsolved Mysteries is doing a segment about the outlaw Butch Cassidy. Apparently someone has uncovered some new evidence about him that indicates that he did not really die in a gun fight in Bolivia -- you know, like they showed at the end of the movie, Butch Cassidy and the Sundance Kid.

They say that he lived out his life as William Phillips in Spokane, Washington!

I'd really like to watch this but I missed it on the local station, and as you know, we don't have cable out here in the country. Would you do me a tremendous favor and watch this for me?

I'm particularly interested in the evidence that they present. And of course I'd be very interested in your opinion. What do you think about it all?

Please write as soon as possible. I'll be looking forward to your letter.

Thanks. I owe you one.

APPENDIX 2 Excerpts from each genre sample

Spoken genre 1: Sports fishing

Now you probably notice I don't have a net. I use basically a cotton or polyester glove -- you don't want something slick -- something that the water can pass through quite easily. And I simply grip the salmon by the tail. It saves a lot of hassle over bringing the net down here. It's a bad enough walk like it is.

Ah, he's holding right out in that current on me. He's still taking up some line. Could be a very good fish; could be a dandy . . . . That does help, to keep the rod tip high. The more line he takes out, the more important it is that you try to prevent him from getting around the rocks. Keep that rod tip high and it'll help-- help you to avoid getting into the rocks . . . . Ya, I think I've got him coming now for the moment. Ah, there you are . . . . Ah, it's a nice fish, nice big male. And away we go again. [from: *Fishful Thinking, PBS*, August 1993. (sp:1;4)]

Spoken genre 2: Political discussion

<AM:> . . . . I-- I think it suggests the president has done a not very good job selling the plan. I think it suggests the republicans have done a good job of-- of putting out disinformation. But most disturbingly, it seems to underscore this cynicism and distrust that people have for politicians--

<JN:> \\ Do you--

<AM:> \\The president says it's not going to hit you and people say we don't believe you.

<JN:> Do you think maybe the-- the news media has a little bit of the blame to share though-- for not, for not explaining to the American people--

<AM:> \\I--

<JN:> \\Look, this is disinformation the republicans are putting out, the middle class are not being hit.

<AM:> Jack, I suppose it does. I mean there is such a huge disconnect from what people <u>think</u> this bill does and what it actually does-- um--

[from: *Washington Week in Review, PBS*, August 1993. (sp:7;5)]

Spoken genre 3: Press conference

<Q:> Mr. President this is a related question. It is about the Gallup poll. It has to do with a racial question. Agents of Dr. Gallup asked people this question: Do you think the Kennedy administration is pushing integration too fast or not fast enough? 50% replied they thought you were pushing too fast. Would you comment?

<P:> No, I think probably he is accurate. The fact of the matter is, this is not a matter on which you can take the temperature every week or 2 weeks or 3 weeks, depending on what the newspaper headlines must be. I think you must make a judgment about the movement of a great historical event which is taking place in this country after a period of time. You judged 1863 after a good many years -- its full effect. I think we will stand, after a period of time has gone by. The fact is, that same poll showed 40% or so thought it was more less right. I thought that was rather impressive because it is change; change always disturbs, and therefore I was surprised that there wasn't greater opposition. I think we are going at about the right tempo. [from: the press conference on 12 September 1963, in George W. Johnson (Ed.) *The Kennedy Presidential Press Conferences*, NY: Coleman, 1978. (sp:11;2)]

Written genre 1: Editorial letters

Use the money to educate the teenagers in trouble (cause that's all it is) about adoption and that their babies will have a chance for a good life with adoptive parents who want and ask for these babies with their heart and soul. Parents who are responsible and able to provide for babies without asking for handouts.

Use the money to counsel them that the love they are missing in their own lives is not recoverable from a spontaneous (or otherwise) tryst with another teenager and a baby to raise. Counsel and educate them (using our education system -- perhaps life skills from Grades 1 to 12) that happiness comes from self worth, not from a helpless baby sucking everything out of an already helpless child trying to raise it.

[from: a letter to the editor, March 1994, in the *Edmonton Journal*. (wr:3:3;6)]

Written genre 2: Tech/sci popular

In a world filled with rich data types -- not just words and numbers, but graphics, sound, and even full-motion video -- this application-centric view of the world feels like something cobbled together by the Windows enclave of the Flat Earth Society. The more natural working environment is one in which applications are simply tools on a desktop. Need to work with numbers? Grab the number-crunching tool. Need to say a few words to introduce a report? Drop a sound object onto the desktop and talk into the microphone.

It's called a document-centric architecture, and if you've used visual editing in an OLE 2.0 application, you've had a brief glimpse of it. Cairo, the next major release of Windows NT, is the object-oriented promised land, where the file system itself will track every aspect of your computing work. In between the two, there's Windows 4.0. [from: 'Inside Windows 4.0' in *PC Computing 7(3)*. (wr:6;6)]

Written genre 3: Tech/sci research

The discovery that the brain controls itself and the rest of the body by some sort of internal biological clock was a major breakthrough in psychiatric research. Now doctors also know that the regularity of this clock is sustained by daily and seasonal changes in duration and intensity of daylight. This finding has had promising implications for the treatment of disorders thought to be related to a disturbance in the circadian rhythm system. It suggests that manipulations of patients' exposure to sunlight could permit such disturbances to be rectified. Research is being carried out to investigate this potential treatment in patients suffering depression and sleep disorders and, in particular, SAD. [from: Chapter 3 in Angela Smyth. *Seasonal Affective Disorder*. London: Unwin, 1990. (wr:1;1)]

APPENDIX 3 Arrangement of the RD types in the comprehension study

Table A1: Arrangement of RD types in the comprehension experiment

PASSAGES	CONDITIONS	
	CIa & CIIa	**CIb & CIIb**
Narrative	+ repetition	- repetition
Samantha gets lost in New York	+ constituent shift	- constituent shift
	+ conjunction-insertion	- conjunction-insertion
	+ r-question	- r-question
	- parenthesis	+ parenthesis
	- iconic sound	+ iconic sound
	- parallelism	+ parallelism
	- order of events	+ order of events
Technical report	+ parallelism	- parallelism
Scientists fear skin cancer link	+ order of events	- order of events
to sunscreens	+ repetition	- repetition
	+ iconic sound	- iconic sound
	- parenthesis	+ parenthesis
	- conjunction-insertion	+ conjunction-insertion
	- r-question	+ r-question
	- constituent shift	+ constituent shift
Conversation	+ repetition	- repetition
Cindy's phone interview	+ r-question	- r-question
	+ conjunction-insertion	- conjunction-insertion
	+ order of events	- order of events
	- constituent shift	+ constituent shift
	- parenthesis	+ parenthesis
	- parallelism	+ parallelism
	- iconic sound	+ iconic sound
News report	+ iconic sound	- iconic sound
A winning career	+ conjunction-insertion	- conjunction-insertion
	+ parenthesis	- parenthesis
	+ order of events	- order of events
	- repetition	+ repetition
	- constituent shift	+ constituent shift
	- r-question	+ r-question
	- parallelism	+ parallelism

CI: spoken CII: written

APPENDIX 4 Instructions, discourse passages, and questions used in the comprehension study

Instructions used in the comprehension experiment

CI (spoken)

The purpose of this study is to examine how different kinds of language usage affect comprehension. Your mission is to assist us to do this by first listening to some discourse passages and then answering a few questions about them. All of your responses will, of

course, be kept confidential and used only for the purpose of this study. You may withdraw from the study at any time if you feel for some reason that you cannot continue.

You may expect the following to happen: First, you will hear 4 discourse passages. Please listen to each one carefully. After you hear all the passages, you will be asked to answer some multiple choice questions. For each question, circle the appropriate response in the space provided below. Please read the questions carefully and answer as accurately as you can. Work at your normal speed. When you are finished, turn in *both* the questions and the data sheet.

Do you have any questions before we proceed?

CI: (written)

The purpose of this study is to examine how different kinds of language usage affect comprehension. Your mission is to assist us to do this by first reading some discourse passages and then answering a few questions about them. All of your responses will, of course, be kept confidential and used only for the purpose of this study. You may withdraw from the study at any time if you feel for some reason that you cannot continue.

You may expect the following to happen: First, you will be asked to read 4 passages. Please read each one carefully. After you read all the passages, you will answer some multiple choice questions. For each question, circle the appropriate response in the space provided below. Please read the questions carefully and answer as accurately as you can. Work at your normal speed. **Do not turn back to the passages while answering the questions**. When you are finished, turn in questions, data sheet, and passages.

Do you have any questions before we proceed?

Discourse passages used in the comprehension experiment

Note: In the following passages, information coded in RD type structures is italicized or underlined.

CI/IIa Passage 1 Narrative *Samantha gets lost in Chicago*

When I first moved to Chicago ten years ago, I got lost on my way to meet a friend at a restaurant. *A Saturday night in July, it was*, and hotter than Hades. The air conditioning in my new Camaro hadn't been working all day. Well, it should have taken just fifteen minutes to get to the restaurant, but -- I don't know, I guess I must have taken a wrong turn somewhere. After an hour, I was still driving around. I was totally lost.

Worse, thunder was rumbling in the distance, and it was getting dark, and I had wandered into a tough neighborhood. That was when I started to get worried. Tough-looking punks hung out on the streets, doing nothing in particular, nothing but staring at my shiny new Camaro as I drove slowly past. I had been in Chicago for three weeks by then, and the whole time the newspapers had been full of stories about tough street gangs.

I wanted to stop and look at my map, but stopping seemed like a really bad idea. Finally, I found myself on a dead-end street. I had to turn around. I pulled into an almost vacant parking lot next to a convenience store, and backed up with noisy haste. The Camaro stalled, and it wouldn't start again.

I knew I was in trouble. Half a dozen tough-looking punks were headed in my direction. One of them, the biggest one, was grinning and carrying a very large wrench. I didn't think he was about to offer his assistance. I thought about rolling up my window, but really, *what good would that have done?*

"Hey, you got the time?" the big one asked me. I lifted my hand to look at my watch. He grabbed my arm. "Nice watch. Mind if I look at it?" He slipped my watch off

and examined it. "Yeah, real nice watch. Hey man, look at this." He tossed the watch to the guy behind him. I knew I'd never see it again. I said something about being late and tried to start the car again.

He shook his head sympathetically. "You sure got trouble there. Too bad. Listen, you got a couple of dollars? We'll go find someone to help you out." We stared at each other for a moment and then, he tried to grab my handbag. I reached for the ignition. That blocked his movement. He cursed and slammed his hand against the roof. At the same moment someone tried to open the passenger door, and finding it locked, kicked it.

Then someone said, "Ahh man, cops! Beat it!" In a second they had vanished into the twilight. A cruising patrol car stopped suddenly after having gone slowly by, and one of the officers came over and asked for my driver's license and my registration. I was glad to see them. And only slightly annoyed when they insisted on searching the Camaro for drugs.

CI/IIb Passage 1 Narrative *Samantha gets lost in Chicago*

When I first moved to Chicago ten years ago, I got lost on my way to meet a friend at a restaurant. It was a Saturday night in July, and hotter than Hades. The air conditioning in my new Camaro hadn't been working all day. Well, it should have taken just fifteen minutes to get to the restaurant, but -- I don't know, I guess I must have taken a wrong turn somewhere. After an hour, I was still driving around. I was totally lost.

Worse, there was thunder rumbling in the distance, it was getting dark, and I had wandered into a tough neighborhood. That was when I started to get worried. Tough-looking punks hung out on the streets, doing nothing in particular, nothing but staring at my shiny new car as I drove slowly past. (*I had been in Chicago for three weeks by then, and the whole time the newspapers had been full of stories about tough street gangs.*)

I wanted to stop and look at my map, but stopping seemed like a really bad idea. Finally, I found myself on a dead-end street. I had to turn around. I pulled into an almost vacant parking lot next to a convenience store, and backed up with a hasty *screech*. The car stalled, and it wouldn't start again.

I knew I was in trouble. Half a dozen tough looking punks were headed in my direction. One of them, the biggest one, was grinning and carrying a very large wrench. I didn't think he was about to offer his assistance. I thought about rolling up my window, but really, it wouldn't have done any good.

"Hey, you got the time?" the big one asked me. I lifted my hand to look at my watch. He grabbed my arm. "Nice watch. Mind if I look at it?" He slipped my watch off and examined it. "Yeah, real nice watch. Hey man, look at this." He tossed the watch to the guy behind him. I knew I'd never see it again. I said something about being late and tried to start the car again.

He shook his head sympathetically. "You sure got trouble there. Too bad. Listen, you got a couple of dollars? We'll go find someone to help you out." *He stared at me. I stared at him. He reached for my handbag. I reached for the ignition.* That blocked his movement. He cursed and slammed his hand against the roof. At the same moment someone tried to open the passenger door, and finding it locked, kicked it.

Then someone said, "Ahh man, cops! Beat it!" In a second they had vanished into the twilight. *A cruising patrol car went slowly past, then stopped suddenly, and one of the officers came over and asked for my driver's license and my registration.* I was glad to see them. And only slightly annoyed when they insisted on searching my car for drugs.

CI/IIa Passage 2 Tech/sci ***Scientists fear skin cancer link to sunscreens***

A team of British researchers suggests that some ingredients found in sunscreens may be linked to skin cancer. Their study indicates that some sunscreens, while preventing sunburns, could also contribute to sunlight-related cancers. These ingredients can damage the skin *by creating cell mutations and by attacking DNA molecules.*

One of the ingredients, known as Padimate-O or octyl dimethyl PABA, was a popular ingredient in Canadian sunscreens until a few years ago. Its use has declined, mainly because it causes allergic reactions in some people, but some manufacturers continue to use it. The new research does not prove a direct link between skin cancer and Padimate-O. However, it does suggest that the chemical can cause damage at the cellular level. Essentially, what happens is this: *when a sunscreen containing this chemical is used, Padimate-O is absorbed into the skin. Sunlight then acts as a trigger, and Padimate-O begins to attack DNA.*

The other substance, Parsol 1789, is one of the most common new ingredients in sunscreens. The researchers did not test Parsol directly but did test dibenzoylmethane, the compound from which it is derived, and they say that this compound has the potential to damage the skin. Therefore, since Parsol can break down into dibenzoylmethane, it could act similarly.

Dr. David Gratton of the Canadian Dermatology Association said that Parsol is one of the most popular ingredients in Canadian sunscreens and that some companies continue to use PABA. According to Gratton, all sunscreens should be seen as the last resort for protection from the sun.

It seems certain that sunscreen users everywhere will greet the news of this research with *groans* of dismay. In view of the evidence, it seems questionable whether anyone will be willing to use sunscreens containing these chemicals. Fifty outdoor enthusiasts visiting local parks were interviewed for this report. None of them felt that they would be willing to continue using sunscreens containing Parsol and Padimate-O.

Kathy Wimsley, a local golfing enthusiast, expressed an opinion commonly shared by many of those interviewed. Wimsley said: "With the threatened demise of the ozone layer, the media has been really bombarding us with constant news reports about UVA rays, UVB rays, skin cancer, and sunscreens. Personally, I'm getting really tired of them. Sure we need to be concerned about these things, but maybe we do not need to be applying sunscreen every time we step outside the door. Look at the facts. It's not simply that any exposure to the sun causes skin cancer; it's that over-exposure to the sun is linked to skin cancer.

"Our best ally here might be common sense not sunscreen. Over-exposure to the sun is linked to skin cancer, so avoid over-exposure to the sun. Don't stay out in the sun during its peak hours. And if you have to be out for any length of time, cover up with a hat and clothing. Personally, I have no intention of increasing the risk of skin cancer by putting those chemicals anywhere near my skin."

CI/IIb Passage 2 Tech/sci ***Scientists fear skin cancer link to sunscreens***

A team of British researchers suggests that some ingredients found in sunscreens may be linked to skin cancer. Their study indicates that some sunscreens, while preventing sunburns, could also contribute to sunlight-related cancers. These ingredients can damage the skin by creating cell mutations and when they attack DNA molecules.

One of the ingredients, known as Padimate-O or octyl dimethyl PABA, was a popular ingredient in Canadian sunscreens until a few years ago. Its use has declined *(mainly because it causes allergic reactions in some people),* but some manufacturers continue to use it. The new research does not prove a direct link between skin cancer and

Padimate-O. However, it does suggest that the chemical can cause damage at the cellular level. Essentially, what happens is this: Padimate-O begins to attack DNA after sunscreen containing this chemical is used, and then Padimate-O is absorbed into the skin, and triggered by sunlight.

The other substance, Parsol 1789, is one of the most common new ingredients in sunscreens. The researchers did not test Parsol directly, but did test dibenzoylmethane, the compound from which it is derived, and they say that this compound has the potential to damage the skin. Therefore, since Parsol can break down into dibenzoylmethane, it could act similarly.

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"*So really, what is our best ally here -- sunscreen, or common sense?* Avoid getting too much sun. Don't stay out in the sun during its peak hours. And if you have to be out for any length of time, cover up with a hat and clothing. Personally, I have no intention of increasing the risk of skin cancer by putting those chemicals anywhere near my skin."

CI/IIa Passage 3 Conversation ***Cindy's phone interview***

Cindy: Matt! Here I am. At last.

Matt: You're late, Cindy! I've been waiting for *20 minutes*. Do I need to remind you that we have to turn in this project today? In exactly 2 hours and 40 minutes. And you--

Cindy: And I said I'd be on time, but instead I'm *20 minutes* late. Yes, I know. I'm really sorry. Look, I haven't eaten yet. Let me just run to the cafeteria. Then we'll get right to work. I'm starving.

Matt. I knew you would be. That's why I picked up this sandwich and coffee for you on the way over. They've been waiting for you -- for *20 minutes*. Just like I have.

Cindy: It couldn't be helped. I just had a job interview. And it took longer than I expected.

Matt: No way. You went to a job interview dressed like that? I don't think so.

Cindy: Well, yeah, actually I did. It was a phone interview.

Matt: An interview on the phone? Really, eh. I've never heard of such a thing.

Cindy: Apparently they're quite common if distance is a factor. This company is in Toronto.

Matt: Yeah? I'm not so sure I'd like doing a phone interview. Though really, I'm not all that that crazy about interviews in general. I like to see a person's reactions when I'm talking.

Cindy: Well, yeah, exactly. That was part of the problem. I couldn't see their reactions so it was really hard to tell if I had interpreted a question correctly. And I didn't know

whether I was answering questions fully enough. I wasn't even sure if they could hear me clearly.

Matt: Oh, did you have a bad connection or something?

Cindy: Well, you could say that. I mean, *wouldn't you expect a conference call in a situation like this*? But no, they used a speaker phone in someone's office. The sound quality was so bad that I couldn't tell who was asking a question. There were six men interviewing me, and all their voices were very similar.

I had to keep asking who was speaking. Finally they caught on and began identifying themselves each time they spoke. It was much easier after that. But still, *I couldn't see their facial expressions or their gestures or their body language*. Oh, and then there was this strange noise that repeated every once in a while.

Matt: So, what kind of questions did they ask you?

Cindy: Oh, the usual things. *They began with some questions about my qualifications. Then they asked personality questions -- about strengths and weaknesses, that sort of thing*. Oh, and then some rather unusual questions, like -- 'What tropical country recently held elections for the first time in its history?'

Matt: Argh! Sounds like a nightmare!

Cindy: Yeah, well that about describes it. It sure was the longest two hours of my life.

CI/IIb Passage 3 Conversation ***Cindy's phone interview***

Cindy: Matt! Here I am. At last.

Matt: You're late, Cindy! I've been waiting for 20 minutes. Do I need to remind you that we have to turn in this project today? In exactly 2 hours and 40 minutes. And you--

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Cindy: Well, yeah, actually I did. It was a phone interview.

Matt: An interview on the phone? Really, eh. I've never heard of such a thing.

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I had to keep asking who was speaking. Finally they caught on and began identifying themselves each time they spoke. It was much easier after that. But still, I couldn't see their facial expressions, gestures, or body language. Oh, and then there was this strange noise -- sort of *errr-iii* -- that repeated every once in a while.

Matt: So, what kind of questions did they ask you?

Cindy: Oh you know, the usual things. They asked several personality type questions -- about my strengths and weaknesses, that sort of thing, after beginning with questions about my qualifications. Oh, and there were some rather unusual questions, like -- 'What tropical country recently held elections for the first time in its history?'

Matt: Argh! Sounds like a nightmare!

Cindy: Yeah, well that about describes it. It sure was the longest two hours of my life.

CI/IIa Passage 4 News ***The winning career***

Welcome to *In the News*. Tonight in our special feature, we look at education and careers in these rapidly changing times. Today anyone who has a casual attitude towards education risks *crashing* failure in their professional life. Graduates find themselves competing for limited openings in a tough job market. The competition is very stiff. Today, winning depends not only on how you plan your career, but also on your resolution to win. *In the News* spoke with Chris Jaretsky, a career consultant. Jaretsky is the author of the new bestseller, *The Career Handbook*, which offers sound advice about winning in these uncertain times.

Jaretsky cautions his clients not to approach a career as something that will just happen. Such a casual attitude will almost certainly doom them to failure. There was once a time when that approach might have worked. But not today. *Today if you want a winning career, you've got to have a plan. And you've got to make a commitment to your plan. And you've got to stay focused on your plan.*

Your planning should begin at the very latest in university. (*Or in technical college if that's the route you choose.*) Many students, thinking that what they do in school doesn't matter in the real world, are eager to take the easiest route to getting a degree. They are content to fill up their programs with whatever courses will fill the time slot -- particularly easy undemanding courses. But you would be better advised to choose courses carefully and to focus on courses that are appropriate to your goals. In the long run, time and money will always be your most valuable commodities. Taking courses that won't advance your career plan wastes both.

If you find yourself in the unfortunate position of wasting your university years, you would be well advised to reconsider your position. *Assess the situation and decide on your objectives, and then start making some changes.*

You should treat your university course work as part of your overall career plan. That means making a resolution to doing your best, and staying focused. Your career begins the minute you walk into your first class in university, not after you get a degree.

CI/IIb Passage 4 News ***The winning career***

Welcome to *In the News*. Tonight in our special feature, we look at education and careers in these rapidly changing times. Today anyone who has a casual attitude towards education risks failure in their professional life. Graduates find themselves competing for limited openings in a tough job market. The competition is very stiff. Today, winning depends not only on how you plan your career, but also on your <u>commitment</u> to winning. *In the News* spoke with Chris Jaretsky, a career consultant. Jaretsky is the author of the new bestseller, *The Career Handbook*, which offers sound advice about winning in these uncertain times.

Jaretsky cautions his clients not to approach a career as something that will just happen. Such a casual attitude will almost certainly doom them to failure. There was once a time when that approach might have worked. But not today. Today if you want a winning

career, you've got to have a plan. It's also necessary to make a commitment and stay focused.

Your planning should begin at the very latest in university. Or in technical college if that's the route you choose. *Thinking that what they do in school doesn't matter in the real world*, many students are eager to take the easiest route to getting a degree. They are content to fill up their programs with whatever courses will fill the time slot -- particularly easy undemanding courses. But you would be better advised to choose courses carefully and to focus on courses that are appropriate to your goals. In the long run, time and money will always be your two most valuable commodities. *So should you be wasting either time or money on courses that will not advance your career plan?*

If you find yourself in the unfortunate position of wasting your university years, you would be well advised to reconsider your position. Start making some changes, after you assess the situation and decide on your objectives.

You should treat your university course work as part of your overall career plan. This means making a commitment to doing your best, and staying focused on your commitment. *Your career doesn't begin after you get a degree. It begins the minute you walk into your first class in university."*

Questions used in the comprehension experiment

INSTRUCTIONS
Please read each question carefully and answer as accurately as you can. For each question chose the **best answer**. Please indicate your answer on the data sheet provided for you. Circle the **best** response.
The following questions are about the narrative, *Samantha gets lost in Chicago:*
1. When did Samantha's adventure take place?
a) on a rainy September evening
b) on a hot night in August
c) on a hot Saturday night in July
d) on a rainy Saturday night in June
e) none of the above
2. What kind of car was Samantha driving?
a) a Corvette
b) a Cadillac
c) a BMW
d) a Lincoln
e) none of the above
3. How long had Samantha been in Chicago when this incident happened?
a) a few weeks
b) 3 weeks
c) 2 months
d) a year
e) none of the above
4. According to Samantha, what was even worse than realizing that she was lost?
a) the air conditioner wasn't working
b) she was almost out of gas
c) she couldn't find her map
d) both a & c

e) none of the above

5. Which best describes how Samantha backed up in the parking lot of the convenience store?

a) quietly -- she didn't want to attract any attention
b) hastily
c) noisily
d) both b & c
e) none of the above -- she didn't tell us that

6. When the punks were walking towards Samantha's car, what did she do?

a) she quickly put the window up
b) she tried to put the window up but couldn't
c) she thought about putting up the window
d) both b & c
e) none of the above

7. When one of the punks asked Samantha for money, what did she do?

a) she stared at him
b) she gave it to him
c) she shook her head
d) both a & b
e) none of the above

8. What did the patrol car do before stopping?

a) it flashed its lights
b) it didn't do anything -- it just stopped
c) it went slowly past
d) both a & b
e) none of the above

The following questions are about the technical report, *Scientists fear skin cancer link to sunscreens*:

9. According to this report, how do sunscreens containing Parsol and Padimate-O contribute to skin cancer?

a) they create cell mutations
b) they break down into dibenzoylmethane, a dangerous chemical that causes skin cancer
c) they attack DNA molecules
d) both a & c
e) all of the above (a, b & c)

10. According to the British researchers, **when** do sunscreens containing Padimate-O **begin** to cause skin damage?

a) after being used for prolonged periods of time
b) as soon as Padimate-O is absorbed into the skin
c) when Padimate-O is absorbed and the skin is exposed to sunlight
d) both a & b
e) none of the above

11. According to this report, which statement is **true** about the relationship between sunlight and skin cancer?

a) over-exposure to the sun is linked to skin cancer
b) UVA rays and UVB rays cause skin cancer
c) exposure to sunlight causes skin cancer
d) both a & b
e) none of the above

12. According to this report, why isn't Padimate-O currently used in sunscreens as often as it was used a few years ago?

a) it causes skin cancer
b) it is much too expensive
c) the use of Padimate-O has not declined
d) both a & b
e) none of the above

13. According to this report, news of this research will cause dismay for whom?

a) researchers
b) sunscreen manufacturers
c) sunscreen users
d) both b & c
e) all of the above (a, b & c)

14. What did Dr. David Gratton of the Canadian Dermatology Association say about the use of sunscreens?

a) we should always use sunscreens whenever we go out in the sun
b) we should use sunscreens only if we have to
c) sunscreens containing Padimate-O and Parsol should be used with caution
d) both a & c
e) none of the above -- he did not comment on the use of sunscreen

15. According to this report, Kathy Wimsley said that the media has been bombarding us with constant news reports about what?

a) skin cancer
b) UVA rays and UVB rays
c) sunscreen
d) both a & c
e) all of the above (a, b & c)

16. According to this report, they interviewed outdoor enthusiasts who agreed on what point?

a) a good sunscreen is our best ally in the war against skin cancer
b) common sense is just as important as sunscreen
c) sunlight is not really linked to skin cancer
d) both a & b
e) none of the above

The following questions are about the conversation, *Cindy's phone interview*:

17. How late was Cindy for her meeting with Matt?

a) a half hour
b) 15 minutes
c) 1 hour
d) 20 minutes
e) none of the above

18. Cindy said that:

a) they told her that the interview would be conducted on a conference call
b) she expected that they would use a conference call for the interview
c) she asked them to use a conference call for the interview
d) both b & c
e) none of the above

19. According to Cindy, what was/were the most difficult problem/s **throughout** her interview?

a) figuring out who was speaking, because all the men had similar voices
b) answering their unexpected questions about world affairs and politics
c) not being able to see their facial expressions, gestures, and body language
d) both a & b
e) none of the above

20. Which best describes the questions asked during the interview?
a) They asked her personality questions, then asked about her qualifications
b) They asked about her qualifications, then asked personality questions
c) They asked questions about current world events at the beginning
d) They forgot to ask her about her qualifications for the job
e) none of the above

21. Why did Matt have trouble believing that Cindy just had an interview?
a) he had never heard of a phone interview before
b) she had promised not to be late for their meeting
c) she wasn't looking for a job
d) both a & b
e) none of the above

22. Matt said his opinion of interviews in general is what?
a) he thinks interviews are over-rated
b) he's had several jobs, but he's never had to do an interview
c) he's not too crazy about interviews
d) both a & b
e) none of the above

23. Cindy said that not being able to see the interviewers made what difficult?
a) she didn't know if she had interpreted their questions correctly
b) she didn't know if she had answered their questions fully enough
c) she couldn't tell if they could hear her clearly
d) both a & c
e) all of the above (a, b & c)

24. According to Cindy, the speaker phone was not the only problem. What else made hearing her interviewers difficult?
a) there was a constant humming noise on the line
b) one of the men kept coughing
c) the sound kept fading in and out
d) both a & b
e) none of the above

The following questions are about the news report, *A winning career.*

25. According to this *In the News* report, anyone with a casual attitude to education:
a) should see a career consultant
b) won't be able to find a job
c) risks failure in their professional life
d) both a & b
e) none of the above

26. According to the career consultant, Chris Jaretsky, what is **most essential** for a winning career?
a) good grades in your courses
b) knowing how to compete in a tough job market
c) a plan, commitment, and focus
d) both b & c

e) none of the above

27. Many students take the easiest route to getting a degree. According to Jaretsky, this arises from what kind of an attitude?

a) they feel they must get through their classes at any cost (even cheating)
b) they think that what they do in school does not matter in the real world
c) they believe a university degree is vital for getting a good job
d) both a & b
e) none of the above

28. According to Jaretsky, while you are in university, what attitude should you have to the courses that you are taking?

a) time spent on courses is more valuable than money
b) you shouldn't waste time or money on useless courses
c) you should get through your course work as quickly as possible
d) both a & b
e) all of the above

29. According to Jaretsky, what is/are the most important thing/s for having to have a winning career?

a) time, money and luck
b) a university degree
c) commitment
d) both a & c
e) all of the above

30. According to Jaretsky, what is the very latest that career planning should begin?

a) after you have your university degree
b) during university
c) during technical school
d) both b & c
e) none of the above

31. According to Jaretsky, what should you do if you find that you are wasting your university years?

a) start making some changes immediately, then take some time to think about your long term objectives
b) assess the situation, decide on your objectives, then make some changes
c) see a career consultant
d) drop out of university
e) both a & c

32. According to Jaretsky, when does your career actually begin?

a) as soon as you receive your degree
b) when you begin your first job
c) when you've decided on a career
d) when you start university
e) none of the above

Your mission is completed. ☺

Thank you for your participation in this study.

If you have any comments, please feel free to make them on the back of your DATA SHEET.

If you have any questions, please feel free to ask them when you turn in your materials.

APPENDIX 5 Summaries of scores and t-statistics for the comprehension study

Table A2: Frequency of recall by subjects within Condition I, *spoken*

RD type structure	CI a				CI b				t-stat
	+RD		-RD		+RD		-RD		
NARRATIVE:	f	%	f	%	f	%	f	%	
constituent shift	22	63					5	14	4.75
repetition	32	91					2	6	13.74
parenthesis			8	23	20	57			3.08
conjunction-insertion	32	91					22	63	2.98
iconic sound			20	57	31	89			3.11
r-question	31	89					20	57	3.11
parallelism			19	54	30	86			3.01
order of events			18	51	29	83			2.93
TECHNICAL/SCIENTIFIC:									
constituent shift			20	57	30	86			2.75
repetition	28	80					19	54	2.35
parenthesis			29	83	32	91			1.06
conjunction-insertion			20	57	30	86			2.75
iconic sound	25	71					15	43	2.49
r-question			18	51	28	80			2.60
parallelism	17	49					12	34	1.21
order of events	27	77					16	46	2.81
CONVERSATION:									
constituent shift			26	74	35	100			3.43
repetition	31	89					3	9	11.01
parenthesis			15	43	25	71			2.49
conjunction-insertion	26	74					15	43	2.78
iconic sound			19	54	31	89			3.38
r-question	29	83					19	54	2.67
parallelism			12	34	29	83			4.67
order of events	27	77					17	49	2.55
NEWS REPORT:									
constituent shift			15	43	27	77			3.08
repetition			21	60	33	94			3.69
parenthesis	29	83					25	71	1.13
conjunction-insertion	30	86					20	57	2.75
iconic sound	29	83					19	54	2.67
r-question			19	54	29	83			2.67
parallelism			22	63	34	97			3.91
order of events	25	71					13	37	3.02
CI: Condition I CI a: n = 35 CI b: n = 35					$t(73) = 1.995$, $p < .05$, two-tail test				

Table A3: Frequency of recall by subjects within Condition II, *written*									
RD type structure	**CII a**				**CII b**				**t-stat**
	+RD		**-RD**		**+RD**		**-RD**		
NARRATIVE:	**f**	**%**	**f**	**%**	**f**	**%**	**f**	**%**	
constituent shift	29	73					7	20	5.26
repetition	35	88					4	11	9.97
parenthesis			10	25	25	71			4.48
conjunction-insertion	36	90					25	71	2.09
iconic sound			19	48	29	83			3.38
r-question	36	90					25	71	2.09
parallelism			15	38	33	94			6.25
order of events			17	43	30	86			4.25
TECHNICAL/SCIENTIFIC:									
constituent shift			18	45	29	83			3.62
repetition	35	88					21	60	2.84
parenthesis			20	50	28	80			2.80
conjunction-insertion			21	53	31	89			3.62
iconic sound	27	68					13	38	2.72
r-question			20	50	29	83			3.13
parallelism	23	58					15	43	1.26
order of events	33	83					18	51	3.01
CONVERSATION:									
constituent shift			30	75	34	97			2.80
repetition	30	75					0	0	10.11
parenthesis			10	25	29	83			6.05
conjunction-insertion	30	75					17	49	2.42
iconic sound			20	50	30	86			3.49
r-question	37	93					24	69	1.41
parallelism			15	38	29	83			4.42
order of events	31	78					19	54	2.17
NEWS REPORT:									
constituent shift			20	50	30	86			3.49
repetition			20	50	34	97			5.25
parenthesis	30	75					24	69	0.61
conjunction-insertion	37	93					21	60	3.59
iconic sound	33	94					21	60	1.92
r-question			21		31	89			3.62
parallelism			20		33	94			4.74
order of events	33	94					19	54	2.74
CII: Condition II CII a: n = 40 CII b: n = 35									$t(73) = 1.995$, $p < .05$, two-tail test

Table A4: Recall effects for RD type structures across all genres in all conditions

RD TYPE	narrative		tech/sci		conversation		news report	
	CI *spoken*	CII *written*	CI *spoken*	CII *written*	CI *spoken*	CII *written*	CI *spoken*	CII *written*
constituent shift	*	*	*	*	*	*	*	*
repetition	*	*	*	*	*	*	*	*
parenthesis	*	*	-	*	*	*	-	-
conj-insertion	*	*	*	*	*	*	*	*
iconic sound	*	*	*	*	*	*	*	-
r-question	*	*	*	*	*	-	*	*
parallelism	*	*	-	-	*	*	*	*
order of events	*	*	*	*	*	*	*	*

CI: Condition I
CII: Condition II
* indicates significant difference in recall within the condition
- indicates no significance difference in recall within the condition
$t(73) = 1.992$, $p < .05$, 2 tail test

Table A5: Summary statistics for all subject scores in all conditions in the comprehension experiment

Condition	n	mean	s	range
CI *spoken*				
CI a	35	21.17	2.95	12
CI b	35	20.43	3.01	14
CII *written*				
CII a	40	20.75	3.13	11
CII b	35	21.63	2.79	11